

DOCUMENT RESUME

ED 082 408

EC 052 608

AUTHOR Mardell, C. G.; Goldenberg, D. S.
TITLE Learning Disabilities/Early Childhood Research Project. Annual Report August 31, 1972.
INSTITUTION Illinois State Office of the Superintendent of Public Instruction, Springfield.
PUB DATE 31 Aug 72
NOTE 134p.; Developmental Indicators for the Assessment of Learning Project
EDRS PRICE MF-\$0.65 HC-\$6.58
DESCRIPTORS *Early Childhood; Evaluation; Evaluation Criteria; *Exceptional Child Research; Intervention; *Learning Disabilities; Prevention; *Screening Tests; Task Performance; *Test Construction
IDENTIFIERS Illinois; Title VI

ABSTRACT

Developmental Indicators for the Assessment of Learning (DIAL), a 1 year project in Illinois, funded through Title VI, to develop screening procedures for identification of prekindergarten children with potential learning disabilities is described. Discussed are evaluation of existing test instruments, which did not meet established criteria, and use of the same criteria to develop an identification instrument for observing and recording behaviors. Criteria are specified such as applicability for age range, individual administration, duration time of 30 minutes, minimal cost, multidimensionality, noncategorical approach, and use by paraprofessionals. Screening of children in sensory, motor, affective, social, conceptual, and language areas with such tasks as walking on a walking board, catching, separating from mother easily, or talking in phrases is detailed. Results of two pilot studies and screening of approximately 4,400 children in eight localities in Illinois are given, which indicate that of 124 items which could show a developmental trend, 118 were statistically significant. Recommendations of Project DIAL include conducting developmental screening programs of the total 3- to 5-year-old population (including vision and hearing screening), developing of children's profiles, distributing the profiles to the pediatrician or family doctor, and considering the child's assets as the factor which might determine success in school. More than half the document is devoted to appendixes containing sample screening instruments, memoranda, a parent questionnaire, and evaluation reports. (MC)

ED 082408

Learning Disabilities/ Early Childhood Research Project

Developmental
Indicators for the
Assessment of
Learning

The Office of the
Superintendent of
Public Instruction
State of Illinois
Michael J. Bakalis
Superintendent



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LEARNING DISABILITIES/ EARLY CHILDHOOD RESEARCH PROJECT

ANNUAL REPORT August 31, 1972

The Office of the
Superintendent of
Public Instruction
State of Illinois
Michael J. Bakalis
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ACKNOWLEDGMENTS

The annual report of the Learning Disabilities/Early Childhood Research Project is a genuine attempt to share our experience in order that others interested in screening and identification of prekindergarten children need not duplicate effort but continue going forward. This result would not have been possible without the professional consultation and expertise of many leaders.

Sincere appreciation is extended to the many professionals and support staff within the Illinois Office of the Superintendent of Public Instruction and to our Advisory Board for their continuous advice, talent, and support.

In addition, we are grateful to the many individuals and school systems throughout the State of Illinois that participated in the standardization of DIAL.

A special note of thanks is due Dr. John Wick, the statistical consultant, who helped us at every stage of the research development and wrote Part III of this report.

Finally, this project is indebted to the constant encouragement and understanding of our husbands, Howard and Mort, and our children - Alan, Benjy, Brad, Dina, and Ruthie.

C.D.M.
D.S.G.

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PART I

PROJECT DESCRIPTION

INTRODUCTION

On June 17, 1971, two bills were passed by the Illinois Legislature which had significant implications for the education of exceptional children.

House Bill 322 - later to become Article 14-1.03a, Illinois Annotated Statutes 122, The School Code of Illinois, recognized, for the first time, children with learning disabilities as a separate classification eligible for special services in the public school. Children with specific learning disabilities were designated as those "Children between the ages of 3 and 21 years who have a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such disorders include such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such a term does not include children who have learning problems which are primarily the result of visual, hearing or motor handicaps, of mental retardation, emotional disturbance or environmental disadvantage."

House Bill 323, amending Article 14-1.03, 14-1.04, 14-1.05, and 14-1.06 of The School Code of Illinois, reduced from five years to three years the minimum age at which children with special learning needs are entitled to receive special education services through the public schools.

Both bills were to become effective July 1, 1972.

Of the many implications resulting from this legislation, one of the most difficult was finding procedures which would identify very young children with learning problems (either current or potential). Extensive research has been done on the development of screening and diagnostic batteries for school-age children. However, there is at present no predictive screening battery for the identification of prekindergarten children with potential learning problems.

Therefore, in the fall of 1971, the Department for Exceptional Children in the Office of the Superintendent of Public Instruction, undertook a project which would, it was hoped, result in such a predictive battery. Funds appropriated through Title VI ESEA (Appendix A) financed the effort which eventually became known as Project DIAL - (an acronym from the project thrust - Developmental Indicators for the Assessment of Learning).

OBJECTIVES

Project DIAL was designed to fulfill four major objectives by August 31, 1972. These were:

1. To compile an acceptable set of evaluative instruments which may be used for the identification of potential learning problems in children 0-6 years of age.
2. To develop recommendations for implementation and utilization of this final battery.
3. To develop recommendations for intervention, amelioration, preventive, and/or remedial programs for prekindergarten children with potential learning problems.
4. To recommend areas in early childhood special education in need of further research.

ORGANIZATION

A project director, Dr. Carol Mardell, was responsible for the implementation of this project. She was assisted by Mrs. Dorothea Goldenberg. Both are employees of the Handicapped Children Section, Department for Exceptional Children, Office of the Superintendent of Public Instruction.

Two committees assisted in the planning and organization of the project:

1. A steering committee composed of Office of the Superintendent of Public Instruction personnel was formed to provide internal communication among related departments of OSPI. Committee members were asked for technical assistance in designing the implementation of the project.
2. An advisory board was composed of professional persons outside OSPI who could offer expertise specifically related to the direction of the project.

The members of these committees were:

Steering Committee

Mr. David Donald, Director

Handicapped Children Section

Mr. Kenneth Imhoff

Pupil Personnel Services

Mr. Levi Lathen

Assistant Superintendent - Media Services

Mr. Chalmer Moore
Curriculum Development
 Mrs. Lee Patton
Coordinating Unit, Exceptional Children
 Miss Barbara Vogel
Learning Disabilities Supervisor
Advisory Board Members
 Mr. Robert Abbott, Waukegan
 Mrs. Naomi Abrams, Chicago
 Dr. Joseph Braga, Chicago
 Ms. Viva Cornett, Jacksonville
 Mr. Ivan Garrison, Jacksonville
 Mr. Aaron Gray, Peoria
 Dr. Herbert Grossman, Chicago
 Dr. Doris Johnson, Evanston
 Dr. Merle Karnes, Urbana
 Dr. Eliezer Krumbain, Chicago
 Dr. Ida Lalor, Evanston
 Dr. Agnes Lattimer, Chicago
 Dr. Thomas Linton, Chicago
 Mrs. Dorothy Livingston, Chicago
 Dr. Jeanne McCarthy, Schaumburg
 Mr. Kenneth Randle, Kankakee
 Dr. Jerome L. Schulman, Chicago
 Dr. Paul Weiner, Chicago
 Dr. Ernest Yahiro, Park Ridge
 Mrs. Lyn Zimmerman, Springfield

- 2) gross and fine motor
- 3) affective
- 4) social
- 5) conceptual
- 6) language

- a) receptive
- b) expressive

- b. Based on an item analysis of other instruments, specific items were selected for the assessment of each area of functioning.
5. The procedures and materials were field tested in eight locations.
6. DIAL data were analyzed and norms established.
7. Internal and external evaluations of the project were conducted.
8. Plans were developed for the continuance of the project.

A flow chart which summarizes the objectives, organization, and implementation of this project may be found in Appendix B.

IMPLEMENTATION

Implementation of Project DIAL - its operation and coordination - followed this general design:

1. Criteria by which an instrument could be evaluated for inclusion in the final battery were established.
2. The literature was studied to find worthwhile instruments.
3. Current studies in the following areas were investigated:
 - a. early childhood education
 - b. learning disabilities
 - c. state and federal projects
 - d. clinics and hospitals
 - e. university projects
 - f. private industry
4. Procedures and materials which would meet the criteria of the project were developed.
 - a. Using a multidimensional interdisciplinary approach, areas of functioning were identified as
 - 1) sensory

PART II

PROJECT IMPLEMENTATION

PROJECT FOCUS: THEORETICAL PRINCIPLES

Most enlightened educators no longer view learning patterns as strict environmentalists (with proper training, any child can become anything he desires) or as strict maturationists (development is an unfolding from within which is relatively unaffected by environment). The contemporary view compromises these two extremes by emphasizing the opportunities provided by experiences and training as well as the limits set by heredity (Elkind, 1971).

This eclectic philosophy was adopted for project DIAL with all activities to be based on the following premises:

1. There is an interaction between experience and physiological factors which can affect developmental changes in behavior.
2. There is a broad range of differences between children at any given age level. Normative data should be viewed as a very general guide, dependent upon many diverse factors and requiring regular updating to correspond to changing environmental conditions.
3. There is also a broad range of possible differences within an individual child's developmental aspects, all of which may be important clues to his potential learning patterns.
4. Events or test items must be recordable as objective sources of information rather than as interpretations.
5. Learning must be assessed as both a dynamic process and as an end result.
6. The prediction of later behavior on the basis of earlier behavior is within the realms of possibility; however, longitudinal studies are necessary to establish or refute this premise.

RESEARCH

To achieve the first objective of the project -- "to compile an acceptable set of evaluative instruments which may be used for the identification of potential learning problems in children 0-6 years of age" -- it was first necessary to develop specific criteria for acceptability -- i.e., what elements must be present in an evaluative instrument (or set of procedures) to make it "acceptable" for identifying potential learning problems. The following criteria were

developed by the project staff following a review of related literature:

1. *Screening Procedure*

Evaluative instruments can be categorized into two basic types: those which are relatively short, of a surface nature, and indicate the possibility of a variance in development (screening); and those which are more lengthy, of an in depth nature, and analyze the problem and make differentiations and interpretations (diagnostic). Because many more children can initially be seen by use of a screening instrument, and because, ideally, there is a need to see all children, it was decided to require that the evaluative instrument(s) be of a screening type.

2. *Age Range*

Although the original intent was to find or develop evaluative instruments applicable to all children ages 0-6, the legislative mandate to initiate special education programs for 3-5-year-old exceptional children by July, 1972, gave a particular urgency to finding means for identifying eligible children. To assist local districts in identifying children requiring special education services, the project staff decided to concentrate on instruments primarily applicable to children aged 2½-5½ years.

3. *Individual Administration*

It is very difficult to assess a young child in a group situation. Those tests which attempt to do so use many monitors to assist in the administration. Only in a one-to-one setting can one begin to realize if a child is not responding because he doesn't know how or because he doesn't understand what is expected of him. Only in a one-to-one situation can articulation or receptive language be assessed accurately. Only in a one-to-one situation can gross motor skills be assessed adequately. Therefore, any group test was deemed undesirable.

4. *Expedience*

Typically, the young child has a short attention span. Any screening technique, therefore, must be paced to hold his attention, allow for movement, and not be more than one-half hour in duration.

5. *Multidimensional*

Many screening instruments assess one particular area of development such as speech or visual-motor ability. While such instruments may be valid, it seemed advantageous to have one screening instrument which covered many areas of development. Therefore, it was desirable that an instrument be multidimensional.

6. Noncategorical

There are very few children whose exceptional characteristics are pure and simple. In most instances, especially when the children are very young, the problems are complex and defy the traditional "pigeonholing." With the current emphasis on individualized education, it is no longer necessary nor desirable to categorize children before they can be helped. It follows that the screening instrument need only identify "high risk" children, regardless of the reason for the potential learning problem.

7. Objective Scoring

Every child is entitled to an evaluation based on his actual behavior rather than on the subjective opinion of the tester. Therefore, scoring of an instrument must be based on observable behaviors rather than on judgments.

8. Process Oriented

The end result of what a child can do (the product) is what most screening instruments evaluate. How the child reached, or failed to reach, the end result (the process) should also be considered. This additional information is usually the crux of the predictive ability of any instrument. It helps most in borderline cases at both ends of the continuum; looking at the process helps identify creative and gifted "high potential" children as well as "high risk" children. Both product and process must, therefore, be part of the assessment.

9. Cultural Difference

Although most instruments are not culture-free, some are more applicable to culturally different populations than others. An acceptable screening instrument must consider items which do not reflect any one culture.

10. Norming

Many tests currently in use have been normed on small, white, middle-class populations. It was considered necessary that an instrument or procedure appropriate for statewide usage be normed on large stratified samples.

Once these criteria were agreed upon, project staff members searched the literature to examine evaluative instruments currently available. The following literature sources were utilized:

Child Development Abstracts and Bibliography
Dissertation Abstracts

CSE/ECRC Preschool/Kindergarten Test Evaluations
Education Index

Educational Testing Service Test Collections

ERIC Clearinghouse for Early Childhood Education

Exceptional Child Education Abstracts

Handicapped Children's Early Education Program
Abstracts

Headstart Research Reports

Infant and Preschool Mental Tests: Review and Evaluation

Literature Search and Development of an Evaluation System in Early Childhood Education

Mental Measurements Yearbooks

Psychological Abstracts

Review of Education Research

Tests in Print

Some 900 evaluative instruments described as applicable to the 0-6-year-old age group were listed in the above sources. Using test manuals, the tests themselves and professional test evaluation, the project staff then assessed individual instruments for their relationship to the ten criteria. Many instruments were found to meet some or even most of the criteria. However, none met all of the established criteria and thus none was suitable for meeting the project objective. Therefore, a decision was made to:

A. Compile "Instruments for Screening of Prekindergarten children" which would provide educators with a description of the basic components of certain evaluative instruments. This test guide would cover approximately 90 instruments, indicating for each the:

1. age range
2. depth (screening or diagnostic)
3. administration factors
4. response during test
5. performance factors
6. measurements requiring subjective judgment with/without child

All 900 measures listed by the Educational Testing Service could not be included in this Guide. Some were purposely excluded because they are well-known intelligence test batteries (WISC, Cattell, Binet, etc.). Others were not included because they were not readily obtainable. This compilation can be found in Appendix C.

B. Create a screening instrument which would incorporate the ten criteria and which would identify those children who showed indications of developmental performance delay.

Support for this objective came from the literature. Hammer (1969) concluded that

There is a need for the development of identification devices which go beyond the reporting of development in terms of cognitive functions and intelligence scores. This research needs to incorporate profiles of development and

relate to the continuum of services needed for the handicapped child.

Wyatt (1970) agreed that it is desirable to systematically evaluate children at different stages during their early years since deficiencies in learning the primary skills may become evident during this time and may lead to further and often more extensive learning problems. Early identification might prove of great value for the prevention of more complex learning problems later on. Denhoff, Hainsworth, and Hainsworth (1971, 1972) concurred that many children with potential learning problems can be discovered very early in life with appropriate identification techniques. The development of such techniques became the main thrust of this project.

DEVELOPMENT OF DIAL ITEMS

The initial step in the development of an identification instrument was the decision to focus on specific areas of a child's functioning. To place the information gleaned from the literature search into its proper perspective, a conceptual model (Figure 1) was developed. Dr. James Chalfant, University of Illinois Special Education Department, provided valuable assistance in this process.

Using this model, project staff members then performed an item analysis of specific behaviors and (in relation to) age norms. Items which seemed to provide developmental indicators of the learning process were compiled by area of functioning and placed into a preliminary battery. The rationale for inclusion and normed data references demonstrate how the battery was developed.

1. Sensory

Johnson & Myklebust (1967) refer to several basic integrities necessary for learning. These include peripheral, central and psychological functions, as well as the opportunity to learn. Since a child receives information via the senses, any disruption of sensory input would seriously affect the learning processes (Myklebust, 1954).

In Illinois, the screening of vision and hearing (peripheral nervous system) is a function of Public Health, in cooperation with the Office of the Superintendent of Public Instruction.

The purpose of the school vision screening program is twofold. The primary goal is to identify those children who do not meet criteria for visual performance in order that parents may be encouraged to secure a professional eye examination for the child; the ultimate goal is to use the information obtained from the doctor's report to plan the best possible educational program for each

child. Some children will still have visual limitations following treatment.

Normal vision in an adequate visual environment does not guarantee normal school progress; however, a child's ability to see well, to use his vision properly is directly related to his ability to make normal academic progress. Reliable instruments are available and sound screening methods have been developed which make screening the best tool for identifying most children with screenable defects. Children failing the test should be referred for a complete eye examination, definitive diagnosis, and treatment where indicated.

An outline for an adequate school program as recommended by the Illinois Joint Statewide Committee of Ophthalmology and Optometry may be obtained through a listing of acceptable instruments within "Vision Screening Guide." Although it is not always possible to attain the recommended coverage, it must be recognized that any compromise may result in a less effective program.

It is recommended that the hearing evaluation be done in conjunction with the visual screening. For the screening stage of identification audiometry, the following pure-tone frequencies and hearing levels should be used:

Test Frequencies in Cycles Per Second	Screening Levels in Decibels (ISO)
500 Hz	25 dB
1000 Hz	25 dB
2000 Hz	25 dB
4000 Hz	25 dB

Screening is done at the frequencies 500, 1000, 2000, and 4000 Hz at a hearing level of 25dB (ISO).

2. Motor

Gesell (1947, 1952) states that all mental life probably has a motor basis and a motor origin. Kephart (1964) labels the first interaction of a child and his environment as motor activity. The importance of motor development, thus, becomes readily apparent. Delayed motor learning may be a significant factor in the identification of children with potential learning problems (Karlin, 1957; Bryant, 1964; Barsch and Rudell, 1962). Motor learning can be divided into gross and fine motor areas.

A. Gross Motor

Balance and movement pertain to gross motor control. Butler (1971) found no evidence that these abilities are developmental, nor that they are not developmental. The same study indicates the best

Figure 1

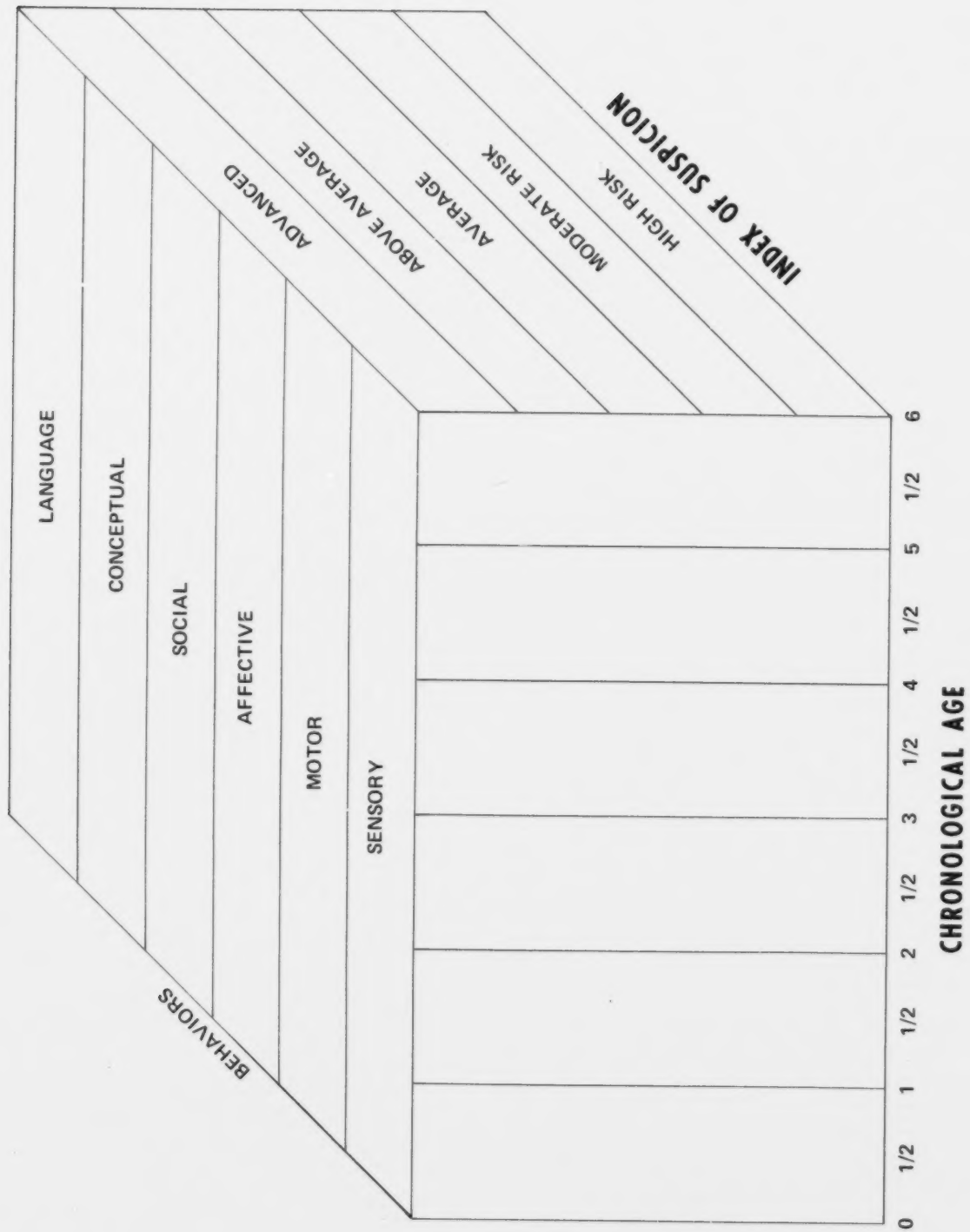


Figure 2

GROSS MOTOR NORMED DATA REFERENCES*

<u>Behavior</u>	<u>Norm</u>
1) Balance	
Attempts step on walking board	Bay, 24-30
Stands with both feet on walking board	Bay, 24-30
Walks part way on walking board	Bay, 30-36
Walks between 2 parallel lines, 8" apart on the floor, without stepping on the lines for 8'-10'	H, 30-36
Keeps feet on line for 10'	Bay, 30-36
Walks walking board with both feet	G, 42-48
Walks forward perfectly on walking board	G, 60-66
Walks forward, backward, sideways on walking board	K, 60-66
2) Throwing	
Underhand	PED, 30-36; PAR, 36-42
Overhand	DDST, 18-24; Ban, G, H, 48-54
3) Catching	PAR, 42-28; Ban, DDST, 48-54; PED, 60-66
4) Jumping	Bay, DDST, 18-24; G, PED, Sh, 30-36; K, 60-66; Ban, PAR, 66-72
5) Hopping	Bay, 30-36; DDST, PAR, Sh, 42-48; G, 54-60; K, PED, 60-66
6) Skipping	Ban, G, K, PAR, Sh, 60-66
7) Standing Still	No norms
8) Height/Head Circumference Ratio	No norms

*See Appendix D for key to source names.

Figure 3
FINE MOTOR NORMED DATA REFERENCES*

<u>Behavior</u>	<u>Norm</u>
1) Block Tower	DDST, 18-24; Bay, B, C, G, MP, Minn, Sh, 30-36
2) Block Bridge	DDST, MP, 30-36; B, C, G, H, Sh, 36-42; PED, 48-54
3) 6-Block Pyramid	Ban, 36-42; Ku, 42-48; MP, Sh, 48-54
4) 10-Block Pyramid	no norms
5) Cutting	H, MP, 24-30; V, 30-36; Sh, 36-42; PAR, 42-48; Ku, 48-54; G, 66-72
6) Drawing (copying without demonstration)	
Circle	C, DDST, Sh, 30-36; B, G, I & A, MP, Minn, Sl, 36-42; PED, 48-54
Cross	G, I & A, Minn, 36-42; B, DDST, MP, 42-48; PED 48-54
Square	I & A, PAR, 42-48; DDST, 54-60; B, C, G, Ku, Sl, Sh, 60-66; PED, 72-78
Triangle	G, I & A, Minn, PAR, 60-66
Dot Configuration	Bender, 60-66; Ku, 66-72
Letters	G, Sh, 42-48
7) Finger Agility	
Touches thumb to two of four fingers	MP, 36-42
Touches thumb to all fingers	MP, 42-48
Brings thumb into opposition with each finger, R & L	Sh, 48-54
8) Clapping	
Imitates actions	Barsch, 60-66; PAR, 66-72
Changes Tempo	Barsch, 66-72

*See Appendix D for key to source names

predictor of gross motor control is a rating of muscle tone. Many investigators (Kephart, 1960; Cratty, 1967; Dunsing and Kephart, 1965) believe specific motor controls are a necessity for learning; by exploring and interacting with the environment, a child receives stimulation and processes these responsive patterns into learned actions.

The first item of DIAL assesses the child's ability to walk a balance beam six feet in length. His performance is evaluated by the point reached before he steps off the beam the first time. The ability to imitate and execute an overhand and underhand throw is then evaluated. The child has six opportunities to throw a bean-bag. Handedness is noted as is the number of bags thrown three feet.

Catching behavior is assessed by the child having three opportunities to catch a bean-bag. Then jumping, hopping, and skipping are demonstrated and the child is asked to model each behavior.

Hyperactivity, total daily motor activity which is significantly above normal, is probably the single most important characteristic to be used as a clue for learning problems (Werry, 1968, 1969; Knobel, Wolman, and Mason, 1959; Laufer and Denhoff, 1957). However, one must remember that not all hyperactive children have learning problems, and many children with learning problems are not hyperactive.

One way of assessing degree of motor control is by requesting a cessation of motor activity. At this point in the gross motor area assessment, the child is asked to stand in a stiff stance which is demonstrated by the operator. Notation is made of the time for which the child is able to maintain the stance, up to thirty seconds. Restriction of limb movement was the sole criteria.

Growth and maturation pertain to physical measures. A growth curve for each child is a sound indicator of whether basic physical needs are being met. The most valuable measurement for detecting learning problems appears to be head circumference in relation to height (Barber and Hewitt, 1956; Winick and Rosso, 1969; Leydorf, 1970). At the present time, strict formulae for using this ratio have not been formulated. There is a need for establishing norms on a large crosscultural sample before the predictability of such a measurement could prove useful. Therefore, height and head measurements are taken for each child.

Normal data references for gross motor items included in the DIAL battery are found in Figure 2.

B. Fine Motor

These abilities pertain to drawing, copying, and fine motor manipulations. Johnson and Myklebust (1967) note that minor incoordination problems with tasks of buttoning and lace typing may be observed in children with learning problems. Ability to build with blocks, cut with scissors, copy geometric shapes and letters, execute finger agility, and imitate patterns which change in pattern and tempo are all tasks which have been considered developmental and indicative of fine motor coordination, as well as conceptual and perceptual growth.

The following items were placed in the initial DIAL battery in the fine motor area:

- 1) Block building consists of four tasks, each dependent on the preceding task. The child is given the correct number of blocks in order to be successful at any given level. The tasks progress from a three-block tower to a three-block bridge to a six-block pyramid to a ten block pyramid.
- 2) Cutting a straight line is followed by cutting a curved line. Scissors with a sharp point are presented, taking into consideration the child's handedness.
- 3) Four geometric figures are presented and the child is asked to copy each one. Then he is expected to copy a series of dots in a simple configuration.
- 4) Finger agility is assessed by having the child imitate a demonstration presented by the operator. Each finger on one hand is touched in succession by the thumb of the same hand. The same task is then presented on the other hand.
- 5) Clapping involves the imitation of three patterns, the last of which also changes in tempo.
- 6) Copying four letters (D, N, E, S).

Normed data references for fine motor items included in the DIAL battery are found in Figure 3.

3. Affective

For the purposes of this project, measures within the affective framework refer to intra-child behaviors. Behaviors were evaluated by DIAL through the use of the observational rating check list (Appendix E).

Throughout the entire DIAL screening, such opportunities to note observable behavior occurred. Summary from a review of the literature maintains a positive relationship between emotional problems and

learning problems. (Bender, 1956; Bryant, 1966; Natchez, 1968). The exactness of labeling degrees of emotional functioning reflects the normality considerations of the culture and society from which one draws reference (Deutsch, 1965).

Even though a single behavior or characteristic pattern does not describe all learning problems, there is a portion of select traits which children with learning problems share. A response to the blocking of goals and/or needs may be classified as frustration. Children with low levels of frustration tolerance are examples of children who may need special help (Stein, 1969). Repeated frustration builds anxiety. A frustrated child is usually a very anxious child. Theorists place anxiety in a key position for development of maladjustment.

Attentional focus, task persistence, and impulsivity affect learning patterns (White and Kaban, 1971). Children must have skills which enable them to attend to a problem until a solution has been reached, stay on a task until the goals are achieved, and restrain activity which is not an integral part of the initial activity (Dykman, 1971). These behaviors necessary for learning are self-regulated. Distractions and motivational factors influence appropriate inhibition (Boger & Knight, 1969).

4. Social

Leaders in educational fields readily accept the importance of the interrelationship between a child's social experience total personality development (Adelman & Feshbach, 1971; Friedrichs, A. et al, 1971). The ability of a child to adjust to a group, relate to his peers, and interact with adults is basic to social competence (White, 1971). Inappropriate judgment concerning social activities or social climate reflect difficulty in social perception (Johnson & Myklebust, 1967). Inadequate social skills may imply many things. However, the cause is not important for purposes of screening.

At present there are limited procedures for social skills assessment (Doll, 1966; Brown, 1966; Boger & Knight, 1969; Woolner, 1969). In DIAL, rather than separate the individual behaviors into social affective categories, the same check list used for affective behaviors, (Appendix E), was employed for social behaviors. Each person responsible for DIAL assessment had an opportunity to notate observable behaviors of the children screened.

Most of the affective/social behaviors do not have developmental norms. The few listed in Figure 4, however, were the exceptions.

5. Conceptual

Conceptual items for DIAL basically cover the objectives

and rationale for the cognitive domain (Bloom, 1963). Language, however, will be dealt with as a separate section.

Butler et al (1971) stated that children under five years learn visual matching based on similarity, but do not deal adequately with same and different as verbal concepts. Therefore, a visual matching item is included whereby children are told "Find one like this." The first shape is a sample item which is taught if necessary. The ten shapes are presented on a DIAL format. Instructions include stopping after three consecutive errors. This task was later placed in the fine motor area for expedient administration. The pleasure most children derive from it makes it an excellent first item at a station.

Attentional processes discussed previously as affective are evaluated as part of the process task. Twenty-four blocks, four of six primary colors, are placed in a large plastic bag. The child is expected to sort by color after seeing a nonverbal demonstration. Certain behaviors are noted during the process, such as eye contact, hyperactivity, and need for adult assistance. Throughout the screening, attention is constantly being assessed because of the nature of the group setting which is similar to a classroom setting.

Naming, recognition, and matching of color are all positively interrelated (Butler et al, 1971). DIAL asks for color naming first. If a child cannot give an expressive response, recognition is assessed by giving the color name and asking the child to point to the appropriate block.

Rote counting may develop without a rational concept of number (Butler et al, 1971). DIAL assesses rote counting to ten. In addition, number concepts up to nine are evaluated. It was assumed that if a child does not know a given number, he will not know a number which is greater. Therefore, any failure terminates the task.

Prekindergarten children are still learning the identity of body parts (Butler et al, 1971). This task was moved to the gross motor area after the pilot studies because it was easier to administer when the child was standing.

Normative data indicate that understanding of prepositions develops during the prekindergarten years. DIAL assesses only five prepositions by asking the child to put a block in various positions in relation to a small box.

Short term memory (STM) is assessed in DIAL by asking the child to follow three directions. It is also assessed by means of several other items such as digit span, sentences, and several gross motor items.

Certain concepts are less universal and more a reflection of particular cultures or subcultures. DIAL staff decided to test the influence of several factors on the development of seven basic concepts. Seven pairs of adjectives are illustrated on a DIAL format so that only one pair is exposed at a time. The child is expected to point to the appropriate stimulus. After each pair is presented one time, it is presented again, but the opposite adjective is requested. An attempt is made in the illustrations to keep all but one feature constant.

Another concept which reflects particular cultures is name recognition — the ability to recognize one's own name from among a group of three names. Once the child's name is presented to him in all capital letters and once in lower case letters with an initial capital. No normative data are available for this item; yet DIAL staff felt this may be a significant developmental item if it is culture fair.

Normed data references for concept items included in the DIAL battery are found in Figure 5.

6. Language

Language serves a function within a person, as well as between people. Acquisition of language sets humans apart from other primates (Lennenberg, 1967). Only humans are endowed with such a complex communications network.

Factors which influence the acquisition of language include sex, socioeconomic status, IQ, bilingualism, adult-child interaction, adult-child experiences, handicapping conditions, and environment-adult-child experiences. Inability to adequately function verbally can rest upon each factor separately or conjunctively (Johnson & Myklebust, 1967; Cruickshank, 1966; Kephart, 1960, 1964).

Chomsky (1964) explains differences between competence and performance. Children need to receive and express language coordinates in order to succeed academically (McGrady, 1968; Kirk, 1971; Johnson & Myklebust, 1967; Deutsch, 1965). Verbal skills necessary for such success include receptive, expressive, syntactical, and articulatory components. All children will acquire language on a developmental timetable (Zimmerman, 1969; Bayley, 1969; Mecham, 1959; Gesell, 1947; Frankenburg & Dodds, 1968). It is language ability which permits communication and interaction for further cognitive development (Deutsch, 1965; Piaget, 1952; Bangs, 1968). In addition, Woolner (1969), Brown (1966), and Boger & Knight (1969) found support for self-perception factors as they relate to affective measures. DIAL factors of speech and language development include the following items.

Digit span is assessed through presentation of sequence numbers presented auditorially. Children are given one to three digits in sequence. Responses are recorded.

For sentence repetition, three sentences are presented auditorially. Children are given sentences varied from simple to complex in number of phonemes. Each sentence is constructed to assess repetition of meaningful phonemes.

For self-identification, a polaroid picture, taken the morning of screening, is shown to the child. The child is expected to respond spontaneously. If no response is given, the question is asked, "Who's this?" Verbal or nonverbal recognition of self and use of first and/or last name are recorded.

Labeling and identification of objects are presented by individual picture form. "What's this?" accompanies the pointing to one of several pictures within a single DIAL format. Object labels are requested for cat, car, dog, train, fish, plane, horse, TV, girl, and phone. Object identification comes with a reverse order of the labels. Action labels are requested for sleep, eat, swim, fly, walk, and wash. Action identification comes in reverse order. Only those objects/actions not labeled are requested for identification.

Expressive and receptive responses for solving problems are assessed by five questions. Responses are recorded for solving problems of hunger, sleep, and cold. Then, responses are recorded for solving problems of loss and crossing of the street.

The number of foods a child can name without a stimulus are recorded for one minute, indicating classification skill.

Presented a pictorial stimulus, the child is asked to tell an interesting story. Total output, sentence length, quality of story, and parts of speech are recorded. Taped performance assists the recording of accurate stories.

For articulation, pictures are individually presented on a DIAL format. Word responses are expected for the picture stimulus. Spontaneous language is recorded but if none is given, the word expected is given for reproduction. Words are selected for initial and final sounds expected of children 2½ to 5½ years.

Normed data references for the communications items in the DIAL battery are found in Figure 6.

Figure 4

AFFECTIVE/SOCIAL NORMED DATA REFERENCES*

<u>Behavior</u>	<u>Norm</u>
1) Separates from mother easily	DDST, 42-48
2) Shows desire to conform	G, 42-48, PAR, 66-72
3) Tests limits	G, 48-54
4) Cooperative	G, 48-54
5) Sustained attention with minimal distractibility	PAR, 48-54

*See Appendix D for key to source names

Figure 5

CONCEPTS NORMED DATA REFERENCES*

<u>Behavior</u>	<u>Norm</u>
1) Shapes	
3 of 5	G, 36-42
3 of 10	Ku, 36-42
8 of 10	B, G, Minn, 48-54
9 of 10	G, 54-60
10 of 10	G, 60-66
2) Process	
Matches 4 colors	MP, 30-36
Matches 2-3, confuses blue and green	G, 36-42
Matches 3 colors	SI, 36-42
Dual focus	White, 66-72

(Cont.)

Figure 5 (Cont.)

3) Colors

Labels 1 color	V, 30-36; G, 48-54
Labels 4 colors	Ban, 60-66; PAR, 66-72
Labels all colors	V, 36-42
Identifies 3 colors	DDST, 36-42
Identifies 1 of 4 colors	Z, 48-54

4) Number Concepts

Understands one	Bay, C, 30-36
Understands three	PAR, 36-42; Ban, 42-48; Z, 54-60
Understands four	G, PAR, 48-54

5) Rote Counting

Counts to 2	PAR, 30-36; MP, 36-42
Counts to 3	PAR, 42-48; G, 48-54
Counts to 4	G, 54-60
Counts to 5	And, 48-54
Counts to 10	And, G, 60-66

6) Body Parts

1 part	DDST, 18-24
3-4 parts	H, 30-36
4 parts	Ban, 60-66
5 parts	SI, 42-48
6 parts	C, 30-36
7 parts	Sh, 24-30
8 parts	Z, 54-60

(Cont.)

Figure 5 (Cont.)

7) Prepositions

Two	Bay, 24-30; G, SI, Z, 36-42
Three	Bay, 30-36; DDST, 36-42; G, 42-48
Four	G, 48-54
Five	G, 54-60

8) Concepts

Size	PAR, 30-36; C, 42-48
Temperature	DDST, 36-42
Speed	Ku, 42-48
Time	Z, 42-48; PAR, 48-54

9) Name Recognition

no norms

**See Appendix D for key to source names*

Figure 6

COMMUNICATIONS NORMED DATA REFERENCES*

Behavior

Norm

1) Digit Span

2	C, 24-30; B, G, ITPA, 30-36
3	B, Minn, 42-48
3-4	And, Ban, ITPA, 36-42
4	And, B, G, ITPA, Ku, PED, 54-60

**See Appendix D for key to source names.*

(Cont.)

Figure 6 (Cont.)

2) Sentences	
6 words	SI, 36-42
10 words	Ku, 42-48
6-7 syllables	G, Ku, 36-42
12-13 syllables	B, C, G, 48-54
3) Self-Identification	
In mirror	MP, 24-30
In photo	Sh, 30-36
4) Name	DDST, G, Sh, 30-36; PAR, V, 36-42
5) Age	PAR, Sh, 60-66; Ban, 66-72
6) Object Pictures	
Labels 3-4 pictures	C, 24-30
Labels 5 pictures	G, 30-36
Labels 8 pictures	G, 36-42
Labels 12 pictures	B, 36-42
Labels 15 pictures	B, 42-48
Labels 16 pictures	B, 48-54
Identifies 4 of 6 pictures	C, 24-30
Identifies 7 of 9 pictures	B, G, 30-36
7) Action	V, 30-36; G, MP, 36-42

(Cont.)

Figure 6 (Cont.)

8) Problem Solving I

Comprehends cold, tired, hungry	B, DDST, Minn, 36-42
1 of 3	G, 36-42
2 of 3	G, 42-48
Understands what to do when tired	PED, 48-54

9) Problem Solving II

1 of 2	G, 54-60
both	G, 60-66

10) Classification

6 items	Z, 54-60
7 items	I & A, 60-66
8 items	I & A, Z, 66-72

11) Picture Story

Combines 2 words meaningfully	PED, 30-36
Talks in phrases	PAR, 36-42
Talks in sentences	PAR, 42-48; V, 66-72
Plurals	V, 24-30; DDST, ITPA, 30-36; G, PED, Sh, 36-42
Describes	PAR, 54-60
Tells story	G, 48-54; DH, 60-66; PAR, 66-72

12) Articulation

m,n,p,h,w	Ar, DAT, TD, Z, 36-42
b,k,g,f,	DAT, 48-54
y,ng,d	DAT, 60-66
l,r,t,sh,ch,dr	DAT, 66-72

STRUCTURE AND ADMINISTRATION OF DIAL

The assessment of each major area of functioning is assigned to a "station" with assessment completed by a previously trained "operator." When the child enters the DIAL area he is greeted by the operators. These operators obtain certain basic information about the child from the parent (Appendix F) and prepare the name identification cards. The child is then introduced to a play area where he may relax, await his turn, and interact with other children. The next step is to an area where the child's picture is taken with a polaroid camera. He then progresses to the gross motor, fine motor, conceptual, and communications stations. At each station the operator notes the child's performance with a circle or slash on a single score sheet which follows him from place to place. Each operator uses a different color pen. The entire procedure requires 25-30 minutes per child.

PILOT STUDIES

1. Unity Day Care

Unity Day Care is a Headstart program funded by OEO through the Chicago Committee on Urban Opportunity.

The DIAL preliminary battery was administered to 12 children on February 8, 1972. Each child was seen by a complete DIAL team and the entire procedure took 25-35 minutes per child. At that time, no scoring procedures had been developed. Assessment of performance was determined by team consultation viewing substantially poor performances by a child in two or more areas. The names of five children identified as "high risk" were noted. The scoresheet for this pilot study appears in Appendix G.

To further verify the concurrent validity of the DIAL instrument, a diagnostic team from OSPI (Pupil Personnel Services) was sent to Unity Day Care to evaluate the same 12 children. This diagnostic team had no information concerning the conclusions of DIAL screening. Results of an extensive battery and observation/interaction by psychologists, social workers, elementary education-guidance counselors, and nurses yielded perfect agreement between the two teams, except for two children. One child identified by DIAL was absent for the diagnostic evaluation, while the other was identified only by DIAL. The psychological evaluation of each child consisted of the following instruments and techniques:

Stanford-Binet Intelligence Scale, Form L-M
The Slosson Intelligence Test
The Peabody Picture Vocabulary Test, Form A

ABC Inventory to Determine Kindergarten and School Readiness

Marianne Frostig Developmental Test of Visual Perception

Perception

Clinical Interview

Draw-A-Person-Test

Observation of Children in Group Interaction

Evaluation of Teacher and Director Reports

2. Evanston - Title III

A second pilot testing of DIAL was initiated on February 22, 1972, in Evanston, Illinois. Cooperation with District 65 - Title III Program in Early Childhood Development, gave DIAL staff a medium for further refinement of the screening procedures and in-service techniques for operators administering DIAL.

The training session for DIAL operators was presented to the Title III staff. Operators were assigned areas by the Title III director, and testing materials were provided for the team use and discussion. A period of the day was set aside for operators to test each other and become familiar with the materials, as well as the presentation of items and educational/developmental rationale.

Children from the Jewish Community Center Nursery School of Skokie, Illinois, were screened the following day by the Title III - DIAL team. Notations and observations were made by the DIAL director and assistant director. Operators were observed in testing stations. Problems of station congestion or testing procedural errors were eliminated.

The scoresheet used in this pilot study appears in Appendix H. The DIAL team observers discussed testing difficulties following the testing situation. They were asked to evaluate the in-service procedures and their own experiences in relation to changes in presentation or items, with suggestions for further test refinement.

Review of the pilot evaluations further substantiated the need for visual devices for training operators. An in-service Packet I (Appendix I) for DIAL field testing was assembled and a 28-minute color video tape of testing procedures was filmed. In addition, a slide-tape presentation was developed. The packet consisted of a coversheet, agenda, the observational rating (Appendix E), and an in-service evaluation form (Appendix M) discussed later.

Pilot test evaluations were made by the DIAL director, assistant director, and statistician. Revisions of test items included adjustment of items within areas for time efficiency, as well as for observational clarity. Specifically, underhand as well as overhand throwing was

now assessed, body parts was moved from Concepts to Gross Motor and designs was moved from Concepts to Fine Motor. Following three directions was added to Concepts after the first pilot as the following normative data were available.

2 directions (Cattell, 30-36; DDST, 24-30)

3 directions (Gesell, 60-66; Binet, 54-60; Cattell, 48-54)

Inclusion of two syllable words extended the number of words presented for articulation. General observations were removed from the record sheet and placed on individual cards kept at each station. A new record sheet was printed for use in field testing (Appendix J). A DIAL floor Plan (Figure 7) was designed to assist these procedures.

FIELD TESTING

The next step in the program, field testing, was expected to provide answers to certain basic questions about DIAL:

- 1) Which items develop according to age?
- 2) What modifications of items and procedures are necessary?
- 3) What is the per child cost of screening?
- 4) Can diversified staff assess young children efficiently after intensive in-service instruction?
- 5) What directions do the data give for longitudinal studies?

In November, 1971, a memorandum (Appendix K) was mailed to all directors of special education within the State of Illinois, and other individuals who had expressed interest in the project. This memorandum included the list of Advisory Board Members, Steering Committee Members, the conceptual model (Figure 1), initial criteria for developing a screening handbook, and initial guidelines for field testing participation.

By December 30, 1971, a second memorandum (Appendix L) was mailed to all directors of special education and Title VI, ESEA project coordinators. This memorandum requested those interested in participating in the field testing to submit an application.

1. Selection of Population

Upon recommendation from the Steering Committee, a stratified sample design was developed, using race, urban-rural, and SES levels as factors (Figure 8). It was agreed that the goal of field testing would be 5,000 children, or 625 per box. The 1970 Census for the State

of Illinois helped determine the population availability. The number in each box represents the proposed Title VI region best equipped to supply that particular population segment. Figure 9 shows a map of Illinois divided into Title VI, ESEA regions.

2. Selection of Sites

Proposals for participation in the field testing were received from seventeen sites. Twelve requests were received from regional Title VI directors, while five were independent or special education districts. Each proposal was appraised according to the following conditions:

- a) urban/suburban/rural
- b) geographic location within the state
- c) availability of 3, 4, and 5 year olds
- d) population characteristics
- e) available personnel
- f) physical facilities
- g) diagnostic services
- h) current and planned educational programs

The Steering Committee, upon direction from the Advisory Board, selected eight sites to participate. Representatives from these sites met in Decatur on February 10, 1972. The agenda for this meeting covered the following items:

- a) number of children to be screened by each site
- b) population characteristics with an alternative given to every site
- c) age requirements--children must be three years old by December 1, 1972, and not currently in kindergarten
- d) DIAL administration
 - 1 - team requirements
 - 2 - equipment
 - 3 - estimated daily capacity
 - 4 - necessary facilities
- e) criteria for low SES - same as for Title I
- f) acceptable expenses
- g) written feedback expected from each site
 - 1 - name of coordinator
 - 2 - spring vacation dates
 - 3 - last day of school
 - 4 - anticipated time of screening
 - 5 - anticipated number of teams

Contractual agreements indicating the responsibility required for each site were written. Subsequently, certain site revisions were necessary due to local areas' inability to meet contractual stipulations (Figure 10). As can be seen,

in some instances, more than one site was responsible for a particular population segment, as for rural, black, low SES. The number in parentheses in each box represents the number of children each site agreed to screen. In addition, some sites were responsible for more than one population segment, such as site 305 which screened both urban, black, low SES and urban, white, low SES. Finally, it was not possible to contract for screening more than 250 rural, black, nonlow SES children.

A calendar was established (Figure 11) whereby the DIAL staff spent two consecutive days at each site. On the first day, the operators were exposed to the DIAL rationale and materials in the morning. In the afternoon, they role played their particular responsibility and prepared the facility for the following morning. DIAL staff was available for assistance throughout the day. On the second day, children proceeded through the screening as the DIAL staff observed and assisted each operator.

Operators were requested to evaluate the in-service training experience at the end of the second day (Appendix M). In-service procedures were modified on the basis of comments from each site.

4. On Site Evaluations

Each site was visited at least once by a DIAL staff member. Each operator of every team was observed to determine consistent administrative procedures, screening time per station, standardization of presentation, and any difficulties. Coordinators were reminded that all materials would be returned to OSPI and that they should keep a running line item budget. In addition, a random check of scoresheets was conducted to verify proper notation. Criteria for site evaluation can be found in Appendix N.

5. Summary

A total of 4,310 children was screened in seven Title VI ESEA regions within the State of Illinois during the spring of 1972. Figure 12 shows the number of children screened, the number of teams, and the cost per site. In addition, Quincy participated in the field testing at no cost to the state.

A memorandum (Appendix O) was sent to each field testing site coordinator at the end of May. Directions were given as to how to fulfill contractual obligations, return materials, and write final reports.

PARENT RATING SCALE

Myklebust (1969) and others have employed teacher rating scales for the identification of children with learning

problems. Since prekindergarten children generally do not have teachers, the logical source for rating would be parents. Wyatt (1970) used a parent questionnaire, but assumed parents would be biased in some of their answers. McLeod (1969) and Denhoff, Hainsworth, and Hainsworth (1971), on the other hand, believe that parents can give accurate descriptions of their children's behaviors in many areas. Project staff, therefore, decided it would be advantageous to determine the reliability of parental reporting.

A list of the DIAL test items was made available to Northwestern University's Learning Disabilities Center under the direction of Dr. Harold McGrady. They, in turn, developed an open-ended questionnaire which was piloted at one site. The questionnaire was then reworded, using layman vocabulary gleaned from the parents' responses, and set into a rating scale format (Appendix P). By the time this was accomplished, most of the field testing of DIAL was completed. However, parent forms were mailed to every site where children were still being brought in for screening by parents. This resulted in the completion of several hundred forms which were correlated with DIAL.

EVALUATION

On August 9, 1972, the Steering Committee met to evaluate the first year's progress of the project. Their internal report can be found in Appendix Q.

In addition, external evaluation was sought. A letter (Appendix R) was sent to fourteen independent evaluators (Appendix S), listing five questions. Responses were received from five evaluators. Criteria for selection of evaluators (Appendix T) were established and three evaluators were chosen. They met for two complete days on September 7-8, 1972. Appendix U contains the vita of each evaluator followed by his written report.

Recommendations from both internal and external evaluations were reviewed. These recommendations will be considered when finalizing plans for the future of Project DIAL.

Figure 7

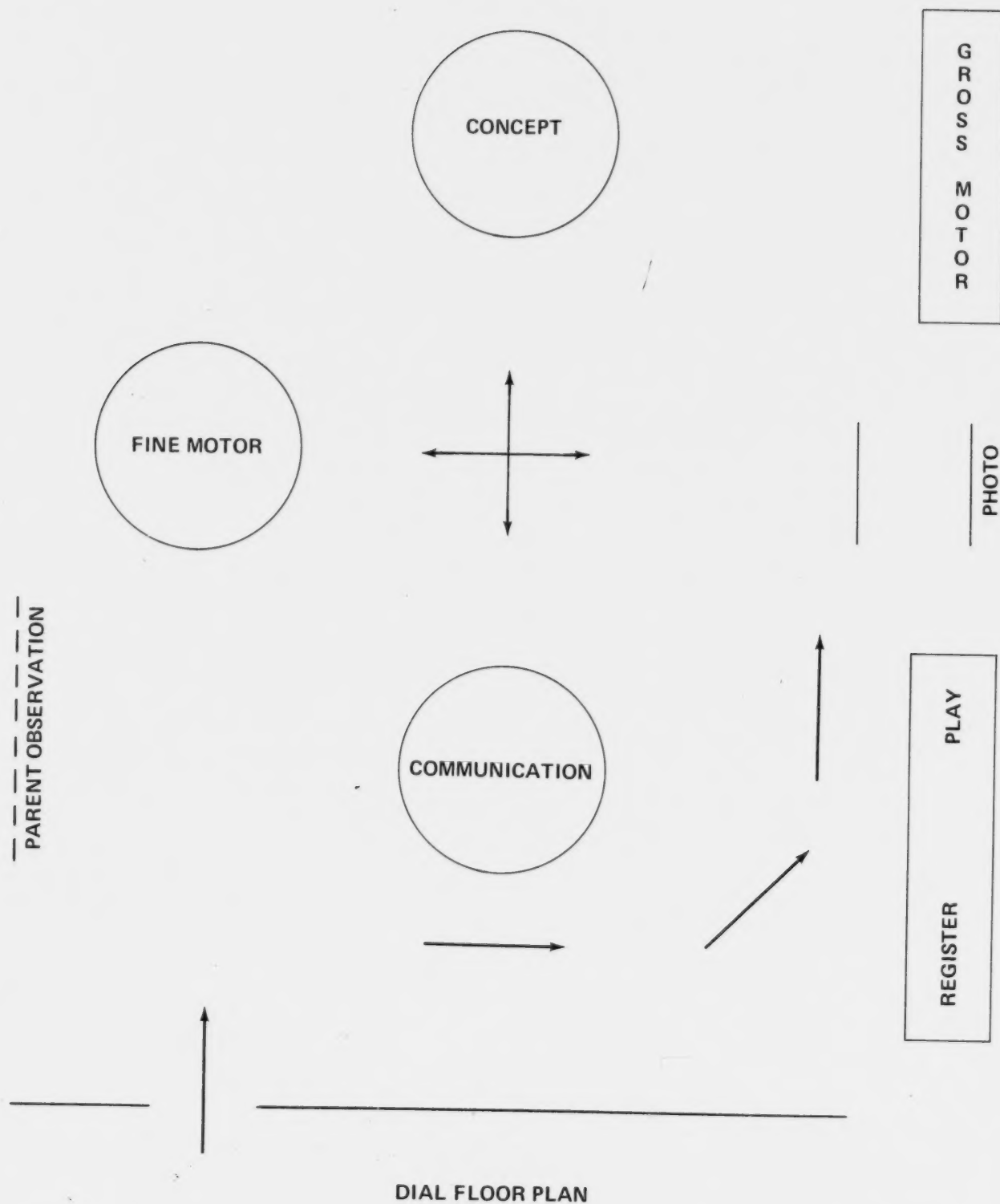


Figure 8

PROPOSED STRATIFIED SAMPLE

		Rural	Urban
Black	LOW	304	313
	NON-LOW	302	310
Non-Black	LOW	309	305
	NON-LOW	301	316

Figure 9

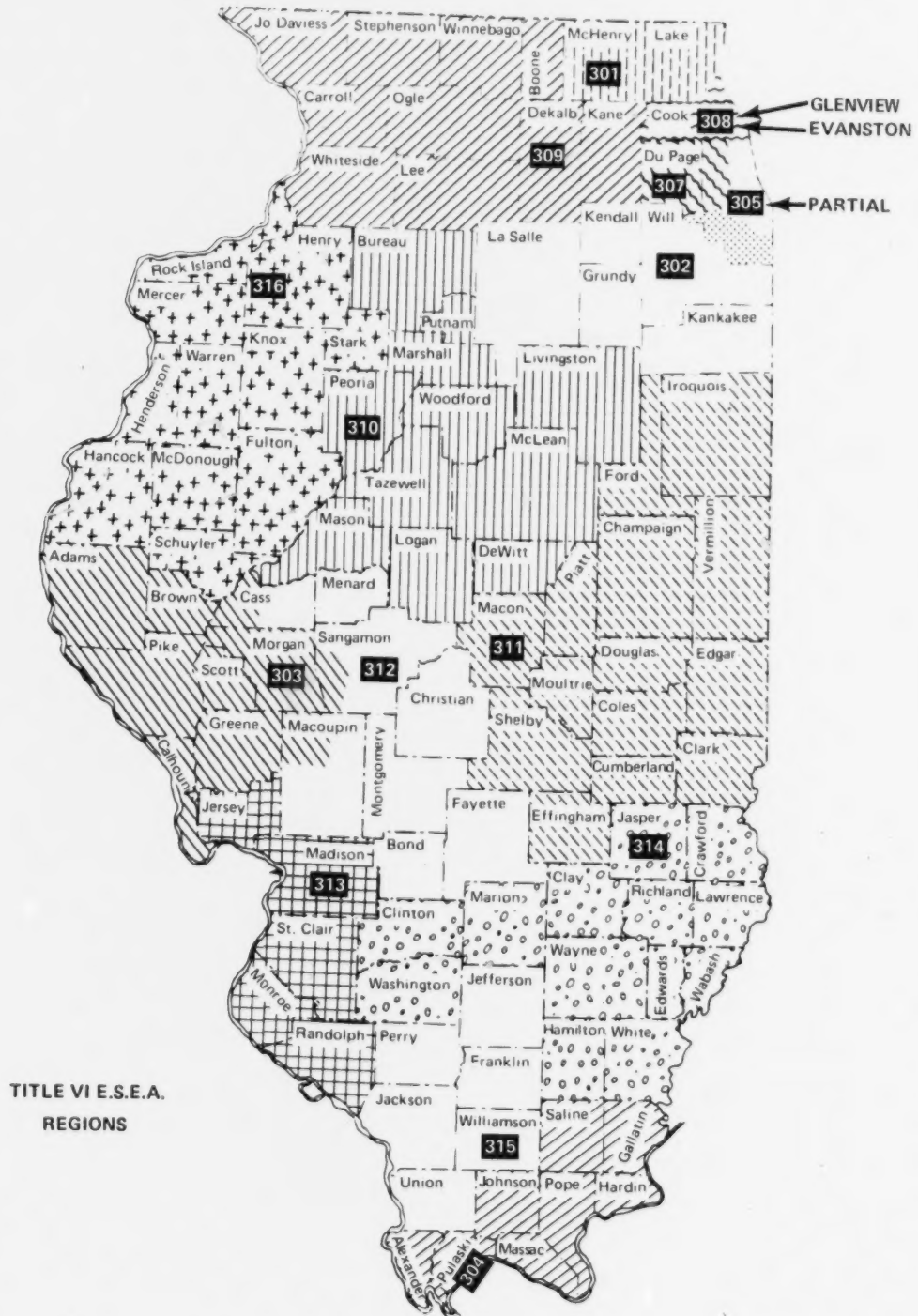


Figure 10

FINAL STRATIFIED SAMPLE

		Rural	Urban
Black	LOW	302 (125) 309 (125)	305 (625)
	NON-LOW	302 (625)	312 309 (125) (500)
Non-Black	LOW	309 (625)	305 (625)
	NON-LOW	301 (625)	316 (625)

In addition, 303 participated without financial remuneration.

Figure 11

DIAL IN-SERVICE CALENDAR

<u>Title VI Region</u>	<u>Dates</u>
309	March 13-14
302	March 27-38
301	April 5-6
316	April 10-11
312, 303	April 13-14
305	April 17-18
309	April 20-21

Figure 12

FIELD TESTING COST

<u>Site</u>	<u># of Teams</u>	<u># of Children</u>	<u>Amount</u>
DeKalb	1	750	\$ 6,635
Joliet	3	750	6,218.23
Lake	2	625	5,610
Moline	1	625	5,550
Springfield	1	125	1,164
Chicago	2	1,250	11,080
Rockford	<u>2</u>	<u>185</u>	<u>1,993.70</u>
	12	4,310	\$38,250.93

Scoring and Coding:

Supervisor	\$251.99	
Coder I	222.48	
Coder II	147.50	
Coder III	<u>118.40</u>	
	\$740.37	
		\$ 740.37
		1,400.00
Statistician		750.00
Clerk		<u>2,000.00</u>
Computer		\$43,141.30

PART III

PROJECT STATISTICAL DATA ANALYSIS

MISCELLANEOUS TABULATIONS

Approximately 4,400 children in the age range of 30 to 66 months were tested. Some of the answer sheets were not usable, so that battery results from 4,356 children were actually used in the statistical analysis. In the original design, the goal was to balance selection on the basis of four dichotomies: sex, location, race, and socioeconomic status. Since participation in the program was voluntary, this goal was difficult to realize, but a fairly good approximation was reached. The actual tabulations for four dichotomies are as follows:

SEX	Male	2255	Female	2101
LOCATION	Urban	2385	Rural	1971
RACE	Black	1328	Nonblack	3028
S.E.S.	Nonlow	1611	Low	2745

The accuracy of the placement of a child into a particular dichotomy is probably a variable. The placement of a child in the category of sex and race is undoubtedly accurate. However, it was the responsibility of those at the testing site to identify the location and socioeconomic status of the child. Placement of an individual child in either of these two was based on the school which he would attend. That is, if the child would attend a school designated as rural, he would be categorized as rural, regardless of where he actually lived. If the future school was in an area designated as a low socioeconomic area, the child would be so categorized. The placement in the categories of sex and race is accurate; the placement in the category of location is satisfactorily accurate; but the placement in the category of socioeconomic status probably should have some follow-up validity studies before any major decisions are based on it.

The age range for the children to be tested was specified at each site, but the sites were not directed to have the children be evenly distributed across that range. In a voluntary program of this type, it is not surprising that more children at the older levels were actually tested. The total of 4,356 children is distributed in age as follows:

Age (in months)	Number
- 33	115
34 - 39	302
40 - 45	614
46 - 51	680
52 - 57	1097
58 - 63	1128
64 -	420

The mean age at time of testing is 53.2 months.

DESCRIPTION OF THE INITIAL TABULATION OF DATA

The general goal in developing the battery of items was to establish procedures for the early identification of children with potential learning problems. This general goal was defined more explicitly through a series of discussions among those working on the project. These discussions led to the following list of working assumptions. Decisions about data collection and processing are dependent on many of these assumptions, and so we feel they should be stated early in this section:

1. The goal of the battery is to report one of two statements about a child who has been tested.
 - (a) The child appears to be developing in a satisfactory manner and no serious trouble is foreseen; or
 - (b) Statistically speaking, the child's development seems to be seriously behind those like him (same age, sex, location, for instance) and that further testing and observation are suggested.

The goal of the battery is to identify one group of children as high risks with a high potential for a learning problem. A specific diagnosis of the problem of each of these children is not intended, nor is it the intention to provide the school district with specific suggestions for action to be taken with the children identified as high risk. The reporting system envisioned will report to the district the specific items upon which the high-risk decision was made and, where possible, indicate logical groupings of these items.

For example, the report will indicate if the item were generally gross motor, fine motor, or communications items. Eventually, it is our intention to determine if those identified as children with potential learning problems do form natural groupings according to the kinds of problems they have. This cannot be done until further analyses of the data are completed.

2. The items in the battery are categorized as having either nominal or above-nominal scales. The responses to a nominal item have no logical order or sequence. Examples included sex (male or female) and handedness (right or left). Non nominal items have a natural order such that one score is considered to be a "more of" something than another. For example, a child who walks four feet on the balance has manifested "more of" that

ability than a child who walks two feet. A child who has given a correct answer which is scored as an "1" has a higher performance than a child who has given an incorrect answer and received an "0".

Only the non nominal items were analyzed in the first analysis attempts. With these items, it is possible for us to determine if a developmental trend appears. That is, do children tend to walk further on the balance beam or answer a question more frequently as they get older? Any item which shows a significant relationship between performance and age is considered, for the purpose of this battery, to be a developmental item. The analysis of the nominal items will occur as soon as a temporary system has been established for identifying those children in the sample who are in the highest risks.

3. Eventually, it is foreseen in this project that a comprehensive and long-range longitudinal validity study will be carried out. This study should allow us to determine

- (a) students who do become defined by the school as having a learning problem;
- (b) which items in the battery were predictive of the various types of problems; and
- (c) which items are useless as predictors.

However, until these data become available (and this may be as long as two years from this writing) no externally valid criterion exists. In the interim, we will define a child with a potential learning problem as one who is consistently delayed in development when compared with his peer group (same age, sex, and race). "Delayed" has been operationally defined as being in the lower 10% in performance on the item. "Consistently" has been operationally defined as those 5% to 7% of the children who show the largest number of "delays." Both definitions are arbitrary and are subject to change on the basis of the results observed through later analysis.

As can be seen, the definition of a "potential learning problem" is norm-referenced. The statements we make about a child will all be implicitly prefaced with "Compared to his peers, this child" A criterion-referenced reporting system might be better, but such a system is impossible until results from a long-range longitudinal study become available, statements like "Any child of age 45 months who scored two or below on this item has a high probability of learning problem XYZ." As mentioned earlier, however, such a system will not be possible for a few years.

4. Eventually, a complete table of intercorrelations

between items will be computed. These could eventually lead to the elimination of certain items on the basis of overlapping predictions. If two items provide precisely the same information, efficiency dictates that one be eliminated. Elimination of items on the basis of high intercorrelations needs to be handled with care on a project such as this, however. The predictions of potential learning problems are made at one extreme, with somewhere around five percent of the highest risks being so designated. Items A and B conceivably correlate as high as 0.90, and each still could contain unique predictive information. Thus, at this point, we are very hesitant to eliminate any items on purely statistical grounds.

5. The overall goal of the initial tabulation is to identify, for each age level, a cutoff point which will designate the lowest ten percent of the performers. Three data analysis approaches will be coordinated in the effort to identify these cutoffs. The best-fitting linear trend (a least-squares fit of the equation $Y = aX + b$ where Y is the score on the item, X is the age in months, and a and b are coefficients computed in the least-squares sense) and best-fitting second degree trend (a least-squares fit of the equation $Y = cX^2 + dX + e$) have been computed for each of the developmental items. In addition, a complete frequency tabulation by age has been completed for each of these items. Inputs from all three of these tabulations will be used to establish the cutoff points.

6. Table I reports the linear and parabolic (curvilinear) correlations for each of the developmental items. Also reported are the amounts of variance accounted for by each of the prediction equations. Interpretation of some of these values should be tempered by these considerations:

- (a) Some of the correlations are severely restricted by the range of possible scores on an item. For example, if an item is scored correct (scored as a 1) or incorrect (scored as a 0), the range of scores has only two points (1 and 0). A severe restriction of the range of possible scores leads to a restricted range of possible maximum correlations. With unrestricted ranges, the maximum correlation between two variables is 1.00 (or - 1.00), but when the range is severely restricted, the maximum possible will be considerably less than 1.00. The actual correlations should be interpreted in this sense.
- (b) The "amount of variance accounted for" refers to the degree to which a score on an item can be predicted, given knowledge of a child's age. If knowledge of age gives no help in predicting how the child will perform on the item, then none of the variance in the item is

accounted for by age. If knowledge of the child's age leads to precisely accurate predictions of performance every time, then 100 percent of the variance in performance is accounted for by age.

TABLE I
VARIANCE ACCOUNTED FOR MEAN AND CORRELATION
FOR ALL DEVELOPMENTAL ITEMS

Item Description	Scoring Description	Variance		Correlation		Mean
		Linear	Parabolic	Linear	Parabolic	
<i>Gross Motor</i>						
1. Balance Beam Distance	# of feet 0 to 6	.146	.161	.382	.401	4.027
2a. Throwing Underhand	# of throws 0 to 3	.094	.094	.307	.307	2.304
2b. Throwing Overhand	# of throws 0 to 3	.054	.055	.232	.234	1.842
3. Catching	# of catches 0 to 3	.158	.166	.397	.408	2.186
4. Jumping	# of ft. landed on 0 to 2	.038	.137	.195	.370	1.798
5a. Hopping	# of hops (one foot) 0 to 5	.357	.524	.598	.724	3.299
5b. Hopping	# of hops (other foot) 0 to 5	.277	.441	.527	.664	2.526
6. Skipping	Criterion Ranked 0 to 2	.172	.206	.415	.453	1.187
7. Standing Still	Criterion Ranked 0 to 2	.104	.105	.323	.323	1.307
8a. Nose	Identification 0 to 1	.036	.295	.191	.543	.946
8b. Ears	"	.037	.260	.193	.540	.939
8c. Neck	"	.029	.117	.169	.342	.899
8d. Hips	"	.047	.064	.217	.253	.271
8e. Knee	"	.039	.062	.198	.249	.862
8f. Elbow	"	.059	.060	.243	.244	.657
8g. Ankle	"	.081	.112	.285	.335	.355
8h. Chin	"	.030	.040	.174	.200	.739
8i. Wrist	"	.046	.065	.214	.255	.253
8j. Shoulders	"	.064	.070	.254	.264	.608
9. Height	# of inches	.186	.640	.431	.800	41.027

(Cont.)

TABLE I (Cont.)

Item Description	Scoring Description	Variance		Correlation		Mean
		Linear	Parabolic	Linear	Parabolic	
<i><u>Fine Motor</u></i>						
1. Designs	Visual Matching 0 to 10	.153	.159	.391	.340	8.715
2. Block Tower	Criterion Ranked 0 to 2	.039	.670	.198	.837	1.929
3. Block Bridge	"	.114	.265	.338	.515	1.860
4. 6 Block Pyramid	"	.212	.246	.460	.496	1.278
5. 10 Block Pyramid	"	.145	.224	.381	.473	.606
6. Cutting Line	"	.157	.183	.396	.428	1.816
7. Cutting Curve	"	.220	.263	.469	.513	1.527
8a. Drawing Figures	Criterion Ranked 0 to 3	.194	.194	.440	.440	1.974
8b.	"	.295	.355	.543	.595	1.996
8c.	"	.247	.301	.497	.549	1.577
8d.	"	.203	.247	.450	.497	1.318
8e.	"	.120	.136	.347	.369	1.430
9a. Letter Copying D	"	.257	.366	.507	.605	1.153
9b. N	"	.270	.400	.519	.633	1.138
9c. E	"	.289	.446	.537	.668	1.359
9d. S	"	.274	.403	.523	.635	1.068
10. Finger Agility	"	.245	.335	.495	.579	1.378
11. Clapping	"	.216	.233	.465	.483	2.193
<i><u>Concepts</u></i>						
1a. Process Completed	Criterion Ranked 0 or 2	.113	.167	.336	.409	.997
1b. Eye Contact	By Observation 0 to 1	.000	.000	-.004	.005	.001
1c. Seeks Adult Aid	"	.000	.000	-.003	.003	.001
1d. Self Stem Behavior	"	.000	.000	.006	.007	.002

(Cont.)

TABLE I (Cont.)

Item Description	Scoring Description	Variance		Correlation		Mean
		Linear	Parabolic	Linear	Parabolic	
1e. Distracted	By Observation 0 to 1	.000	.000	.010	.016	.001
1f. Hyperactive	"	.000	.000	.007	.009	.000
1g. Non-comm. Behavior	"	.000	.000	.007	.009	.000
1h. Partial Sort	Criterion Ranked 0 to 1	.019	.101	-.138	.317	.221
2a. Colors - red	Labeled or Identified 0 to 2	.089	.089	.298	.298	1.546
2b. Yellow	"	.140	.152	.374	.390	1.452
2c. Blue	"	.094	.101	.307	.317	1.362
2d. Green	"	.107	.114	.327	.338	1.434
2e. Orange	"	.123	.128	.351	.358	1.513
2f. Purple	"	.088	.098	.296	.314	1.191
3,4. Number Concepts	Criterion Ranked 0 to 9	.186	.266	.432	.517	3.216
5. Rate Count	Criterion Ranked 0 to 5	.217	.268	.466	.517	3.429
6a. Prepositions on	Criterion Ranked 0 to 1	.009	.140	.097	.374	.873
6b. beside	"	.056	.057	.236	.239	.612
6c. front	"	.032	.034	.178	.183	.394
6d. back	"	.032	.033	.178	.183	.430
6e. under	"	.052	.052	.229	.229	.719
7. Directions	Criterion Ranked 0 to 3	.055	.143	.234	.378	2.629
8a. Concepts - big	Identification 0 to 1	.050	.174	.225	.417	.919
8b. fast	"	.070	.071	.264	.267	.788
8c. hot	"	.058	.059	.240	.243	.750
8d. tall	"	.077	.079	.277	.281	.787
8e. empty	"	.054	.057	.232	.239	.764
8f. day	"	.050	.051	-.223	.226	.728
8g. more	"	.056	.062	.236	.249	.785

(Cont.)

TABLE I (Cont.)

Item Description	Scoring Description	Variance		Correlation		Mean
		Linear	Parabolic	Linear	Parabolic	
8h. little	"	.083	.093	.268	.304	.865
8i. slow	"	.068	.068	.261	.262	.753
8j. cold	"	.058	.067	.241	.258	.796
8k. short	Identification 0 to 1	.097	.098	.311	.312	.757
8l. full	"	.053	.058	.230	.240	.781
8m. night	"	.064	.064	.254	.254	.740
8n. less	"	.087	.106	.295	.325	.503
9. Name Recognition	Identification 0 to 2	.095	.097	.306	.311	1.410
<u>Communications</u>						
1a. Articulation bed	Criterion Ranked 0 to 7	.036	.600	.189	.775	6.674
1b. moon	"	.050	.463	.223	.680	6.350
1c. pop	"	.031	.496	.175	.704	6.353
1d. toe	"	.044	.443	.209	.666	6.186
1e. dog	"	.040	.498	.201	.705	6.653
1f. web	"	.045	.335	.212	.579	5.930
1g. rat	"	.040	.137	.199	.370	5.346
1h. knife	"	.053	.395	.230	.629	6.526
1i. king.	"	.051	.315	.227	.562	6.370
1j. fork	"	.058	.242	.240	.492	6.280
1k. thumb	"	.027	.065	.165	.254	4.633
1l. fish	"	.071	.184	.267	.429	6.209
1m. hammer	"	.046	.366	.215	.605	6.402
1n. garbage	"	.050	.140	.225	.374	5.750
1o. zipper	"	.033	.090	.181	.300	5.108
1p. sandwich	"	.037	.068	.193	.262	5.047
2. Digit Sap	Correct Repetition 0 to 3	.079	.090	.281	.300	2.423
3. Sentences	"	.107	.107	.327	.327	2.338

(Cont.)

TABLE I (Cont.)

Item Description	Scoring Description	Variance		Correlation		Mean
		Linear	Parabolic	Linear	Parabolic	
4a. Picture Cards cat	Labeled or Identified 0 to 2	.028	.348	.167	.590	1.871
4b. sleep	"	.060	.117	.245	.342	1.762
4c. car	"	.036	.482	.190	.695	1.912
4d. dog	"	.036	.511	.189	.715	1.921
4e. eat	"	.056	.175	.236	.418	1.833
4f. train	"	.043	.337	.207	.580	1.888
4g. fish	Labeled or identified 0 to 2	.044	.371	.210	.602	1.900
4h. swim	"	.064	.067	.253	.259	1.400
4i. bird	"	.037	.348	.192	.590	1.878
4j. fly	"	.098	.109	.313	.330	1.688
4k. horse	"	.032	.416	.178	.645	1.893
4l. walk	"	.104	.104	.322	.322	1.575
4m. TV	"	.038	.414	.195	.644	1.906
4n. girl	"	.030	.176	.174	.420	1.752
4o. wash	"	.086	.089	.293	.298	1.564
4p. phone	"	.044	.322	.209	.567	1.886
5. Self ID	Criterion Ranked 0 to 2	.008	.264	.092	.514	1.800
6. Name	"	.101	.133	.318	.364	1.712
7. Age	"	.078	.078	.278	.279	1.460
8. Classification	labels 0 to 10	.112	.133	.335	.365	4.107
9a. Problem I hungry	Criterion Ranked 0 to 2	.070	.071	.265	.266	1.446
9b. sleepy	"	.072	.074	.269	.271	1.412
9c. cold	"	.086	.091	.293	.302	1.349
10a. Problem II lost something	"	.137	.177	.370	.420	1.090
10b. before you cross street	"	.124	.160	.353	.400	.989

(Cont.)

TABLE I (Cont.)

Item Description	Scoring Description	Variance		Correlation		Mean
		Linear	Parabolic	Linear	Parabolic	
11a. Picture Story degree of abstractness	Criterion Ranked 0 to 2	.011	.011	.103	.107	.330
11b. # of sentences	Criterion Ranked 0 to 2	.012	.013	.110	.115	.723
11c. Parts of speech	"	.031	.031	.177	.177	1.092
11d. Sentence length	"	.027	.028	.166	.166	.762
11e. Total word count	0 to 99	.018	.018	.133	.133	12.954

MORE DETAILED ANALYSIS OF SELECTED ITEMS

Before actually establishing the techniques for naming the specific cutoff points for each item, we decided to undertake an in depth analysis of a few selected items. The items were selected such that a few were taken from each of the four parts of the test. Fifteen items or item groups were selected, as follows:

1. Gross-motor, Item 5
(hopping on one foot)
2. Gross-motor, Item 5
(hopping on other foot)
3. Gross-motor, Item 6
(skipping)
4. Fine-motor, Item 1
(designs)
5. Fine-motor, Item 2
(block tower)
6. Sum of Fine-motor, Item 8
(drawing figures)
(five figures)
7. Sum of Fine-motor, Item 9
(letter copying)
(four letters)
8. Concepts, Item 1
(process -- completes task)

9. Concepts, Item 4
(number concepts)

10. Concepts, Item 5
(rote count)

11. Concepts, Item 8
(concepts)
(14 concepts)

12. Communication, Item 4
(picture cards)
(16 possible points)

13. Communications, Item 5
(self-identification)

14. Communications, Item 10
(problem IIa)

15. Communications, Item 10
(problem IIb)

Besides using these target items or item groups to develop the system for establishing cutoff points for potential problems in learning, other questions could not be answered without additional item analysis information. For example, the question of specificity of norms must be answered before final publication of the battery and accompanying technical information. Should, for example, separate male and female norms be established? Should separate norms be published for blacks and nonblacks? Is location (rural or urban) important as a determinant of performance? Information on the fifteen target items or

item groups is necessary preliminary input to answering these questions.

Take, for example, the question: "Is the sex of the child an important determinant of performance?" Table II summarizes the mean performance on the fifteen items or item groups.

In each case, the mean female score exceeds that of the males. The differences are usually not too dramatic, but the trend is clear. The data certainly suggest that separate male and female norms will be necessary. Our procedures will be to (a) assume that separate norms will be required; (b) establish cutoff points made on this assumption; and (c) see if the cutoff points for males and females turn out to be significantly different. If they are different, the separate norms will be published. In case they are not, the norms will be collapsed into a single table.

Now to consider the other two questions: "Should separate norms be published for rural and urban students?" (Note that the question of separate norms for low and nonlow socioeconomic levels is being bypassed pending a restudy of the validity of classifications at the separate sites.) Here are the data on these two questions:

In neither case is the difference as clear as with the sex dichotomy. The differences go one way and then the other; and in many cases, the actual size of the difference is small. With these two dichotomies, we will start with the assumption that separate tables of norms will not be tabulated. However, this decision is subject to change once the item-by-item analysis is undertaken.

ADDITIONAL DATA ANALYSIS PLANS

Each of the items will be treated as though both a linear and parabolic prediction line is most appropriate. In each case, the cutoff points for each case, the cutoff points for each age level will be computed. Separate computations for males and females will be made, and trial runs on separate computations on the other dichotomies will be carried out. The statistical cutoff points will be established by computing the standard error of measure for the linear and parabolic cases, and statistically determining that line which cuts off 10% of the scores.

The best fitting linear and curvilinear lines are statistical averages. As such, they are sensitive to peculiarities in the actual results -- a few scores which differ markedly from the rest in the high or low direction or an unexplainable clustering of a substantial portion of the scores at one location, for example. The second step, then, will be to compare the cutoffs established statistically to the actual frequency distributions to determine how many children

TABLE II

COMPARISON OF MALE AND FEMALE PERFORMANCE ON THE 15 SELECTED ITEMS

Item	Mean Score		Difference
	Male	Female	
B-1	3.10	3.51	0.41
B-2	2.39	2.67	0.28
B-3	1.08	1.31	0.23
B-4	8.58	8.86	0.30
B-5	1.92	1.94	0.02
B-6	8.04	8.57	0.53
B-7	4.44	5.01	0.57
B-8	0.84	1.13	0.29
B-9	3.14	3.30	0.16
B-10	3.24	3.58	0.29
B-11	10.6	10.8	0.20
B-12	18.5	28.8	0.30
B-13	1.77	1.81	0.04
B-14	1.06	1.12	0.06
B-15	0.97	1.01	0.04

are actually identified as in the "lower 10% range" and where those identified are located on the scale. For example, if it turns out that most of those identified are at the lower end of the scale, or are at one or two particular age-locations on the scale, the cutoff points would have to be adjusted. The distribution of students identified as the lower 10% range should be proportionately about the same across the age ranges as the actual distribution of children tested. Any different distribution would suggest idiosyncracies in the cutoffs which should be attended to.

The question logically arises: Why not just use the frequency distributions and forget about prediction lines of any shape? That is, if for example, 250 children of age 45 months are tested on an item, why not simply take the lowest 10% (the lowest-scoring 45 children) and designate that as in the cutoff range? The answer is that by using statistical trend procedures we are attempting to smooth out the sampling errors which are likely to occur. Statistically speaking, the smaller the sample size, the more likely that random errors will occur. By averaging out the trend lines over all of the age categories, the random sampling errors can be smoothed out.

A review of data presented earlier will indicate that the upper age categories are overrepresented in the sample. In

addition to running checks on the efficacy of norms for the sex, race, and location dichotomies, a deck will be constructed with approximately equal numbers of children at each of the age levels. This will be accomplished by randomly eliminating scores for those age levels which are overrepresented. The effects of this tabulation technique on the composition of the trend lines will be computed as well as the effects on the eventual cutoff points established.

The final major task in the data analysis at this time is the preparation of a simple and efficient reporting system for those tested in the future. The process envisioned in the

screening program begins with the child coming to a testing center (probably with a parent) for the short screening program. An important consideration in the reporting system is that any potential call-back for further diagnostic testing be handled while the child and parent are at the first visit. Thus, we need to develop a form which is essentially self-scoring and which can, with only a minor amount of delay, be used to designate those children who will not be called back and those who will. In addition, since most parents will want to have more information in the case of those children called, some information must be made quickly available to the parent about the reasons for the call-back.

TABLE III
COMPARISON OF BLACK AND NONBLACK, AND RURAL AND URBAN SCORES
FOR THE FIFTEEN SELECTED ITEMS

Item	Black and Nonblack			Rural and Urban		
	Mean Score		Difference	Mean Score		Difference
	Black	Nonblack		Urban	Rural	
B-1	3.80	3.33	0.47	3.83	2.65	1.18
B-2	2.64	2.47	0.17	2.91	2.06	0.85
B-3	1.34	1.12	0.22	1.33	1.02	0.31
B-4	8.44	8.80	-0.36	8.91	8.48	0.43
B-5	1.96	1.94	0.02	1.93	1.92	0.01
B-6	7.65	8.54	0.89	8.43	8.13	0.30
B-7	3.88	5.10	1.22	4.68	4.75	-0.07
B-8	0.81	0.90	-0.09	1.08	0.85	0.23
B-9	2.37	3.83	-1.46	3.20	3.22	-0.02
B-10	3.44	3.42	0.02	3.64	3.18	0.46
B-11	9.84	11.10	-1.26	10.7	10.70	0.00
B-12	28.2	28.7	-0.50	28.7	28.5	0.20
B-13	1.79	1.29	-0.13	1.82	1.77	0.05
B-14	0.95	1.15	-0.20	1.11	1.06	0.05
B-15	0.84	1.05	-0.21	0.97	1.01	-0.04

PART IV

PROJECT SUMMARY

The Office of the Superintendent of Public Instruction for the State of Illinois has made a firm commitment to early education for handicapped children. As a result, a unique project was designed to implement this vital goal. Project DIAL (Developmental Indicators for the Assessment of Learning) developed procedures useful for screening and identification of the prekindergarten child with potential learning problems.

During the first year, criteria were established by which present test instruments were evaluated. No single instrument met all criteria. Therefore, these same criteria were used for development of an innovative system of observing and recording the behavior of children between the ages of 2½ and 5½ years. The criteria were:

The instrument should screen (separate children into those who have no apparent potential problems from those who do) rather than diagnose (give specific information as to the method of intervention, amelioration and/or remediation).

The same instrument should be appropriate for the entire age range of 2½ - 5½ years.

Administration should be on a one-to-one basis.

The entire screening should be done in less than thirty minutes.

The cost per child should be minimal

Many areas of observable behavior should be assessed; multidimensional.

Labels should not be designated; cross-categorical.

The procedures may be administered by well-trained professionals and/or well-trained paraprofessionals.

A team approach removes dependence upon singular judgments.

Items should be applicable to children from varied backgrounds.

Norms should be developed on a large cross population.

Leaders in child development were contacted to assist in the selection of appropriate test items which were predictive as well as developmental. A battery, using

multiprofessional input, was assembled and two pilot studies were conducted prior to field testing.

From mid-March, 1972, through mid-June, 1972, approximately 4,400 children were tested through the State of Illinois. Sites participating in the project included: DeKalb, Joliet, Gurnee, Chicago, Quincy, Springfield, Moline, and Rockford. Preliminary data analysis indicate that of the 124 items which could show a developmental trend, 118 were statistically significant. The DIAL manual must be revised utilizing the data analysis and field testing evaluations.

CONCLUSIONS

As a result of this project, the following conclusions can be drawn:

- A. There is a tremendous need within the State of Illinois for an effective means of screening prekindergarten children in order to identify those children with potential learning problems.
- B. It is possible to screen prekindergarten children and meet all stated criteria.
- C. Assembling a battery of items which show a developmental trend is a reality. The importance of developmental performance delay, however, rests upon a longitudinal study. Only such a study can establish predictability.

RECOMMENDATIONS

Contemporary educational and technological advancement in assessment methods have initiated changes in classification procedures for handicapped children. Labels, categories, and the like have served their purposes and are now being discarded for better tools. Behaviors and performance factors can be analyzed so that a child's ability may be viewed with insight and direction for remediation as a primary consideration.

Developmental performance delay does not deny biological dysfunction. It does suggest that within the growth and development processes of childhood, a child may resist unsuccessful or uncomfortable experiences and deny exposure to those experiences. Obviously, the child will move toward the more successful areas. Whether biological

difference or experience creates a lack, such a lack is viewed as a developmental delay. Thus, delay may be totally or partially aligned to environment and experience. Notation of delay is the first step. Experiences which will guide the child toward successful performance is the next step.

It is the recommendation of Project DIAL that:

- A. Developmental Screening Programs be conducted of the total 3-5-year-old prekindergarten populations; vision and hearing scores should be recorded.
- B. Children's performance be recorded, observed and plotted as a functional profile.
- C. Parents' receive information concerning functional profile upon request.
- D. Profile of children with Developmental Performance Delay (DPD) be directed to and shared with Directors of Special Education.
- E. Prekindergarten children in need of special programs receive such services directed toward individual need.
- F. Children exhibiting Developmental Performance Delay be seen for an additional screening session.
- G. Functional Profiles be maintained and brought up to date at 6-month intervals for DPD children.
- H. Functional Profiles be reviewed on an annual basis for all children.
- I. Functional Profiles be distributed to Pediatrician/Family Doctor for inclusion in medical file.
- J. Parents be given assistance in selection of programs to assist DPD children.
- K. A child's assets be considered as well as his liabilities. This may be the missing factor for whether or not a child succeeds in school.

APPENDIX A

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE FEDERAL ASSISTANCE FOR THE EDUCATION OF HANDICAPPED CHILDREN UNDER P.L. 89-313, AMENDMENT TO TITLE I, ESEA; AND PARTS B, C, AND G, EHA										FORM APPROVED O.M.B. NO. 51-RO803	
PART I - PROJECT APPROVAL, STATISTICAL DATA AND ABSTRACT											
1. STATE EDUCATIONAL AGENCY ACTION (To be completed by State educational agency)										2. MAINTENANCE OF FISCAL EFFORT	
STATE CODE (A)	STATE PROJECT NUMBER (B)	SEA CLASS (C)	DATE APPROVED (D)	AMOUNT APPROVED (E)	ALLOCATED FROM FEDERAL FY (F)	SECOND PRECEDING FISCAL YEAR (A)	FIRST PRECEDING FISCAL YEAR (B)				
	331A		Month 12 Day 10 Year 71	\$ 65,000.00	19 71	\$ 1,600 per pupil	\$ 1,700 per pupil				
3. APPLICANT AGENCY										4. PROJECT DIRECTOR	
(a) NAME OF ADMINISTRATOR (Last, first, middle initial)										(a) NAME OF DIRECTOR (Last, first, middle initial)	
(b) NAME OF AGENCY										(b) NAME OF SCHOOL OR BUSINESS	
Office of the Superintendent of Public Instruction										Chicago Office, NSPT	
(c) NUMBER AND STREET										(c) NUMBER AND STREET	
1020 S. Spring St.										188 W. Randolph, Room 1400	
(d) CITY										(d) CITY	
Springfield										Chicago	
(e) STATE										(e) STATE	
Illinois										Illinois	
(f) ZIP CODE										(f) ZIP CODE	
62706										60601	
(g) COUNTY										(g) COUNTY	
Sangamon										Cook	
TELEPHONE										TELEPHONE	
(h) AREA CODE										(h) AREA CODE	
217										312	
(i) NUMBER										(i) NUMBER	
525-2436										3854	
(j) EXTENSION										(j) EXTENSION	
5. PROJECT DURATION											
FROM										TO	
Month 12 Day 15 Year 71										Month 8 Day 31 Year 72	
6. TITLE OF PROJECT (Limit to 50 characters, including punctuation and spaces)											
Learning Disabilities/Early Childhood Project											
7. LEGISLATIVE FUNDING AUTHORITY										9. TYPE OF FORM	
(a) P.L. 89-313										(a) Application	
(b) PART B, EHA										(b) Application Amendment	
(c) PART C, EHA - D-B										(c) Report	
(d) PART C, EHA - ECE										(d) Report Amendment	
(e) PART G, EHA											
(f) OTHER (Specify)											
(g) TOTAL											
10. (a) SIGNATURE OF AUTHORIZED OFFICIAL										11. OE USE ONLY	
Michael J. P. [Signature]										School District Code	
										Vendor Code	

APPENDIX A (Cont.)

12. PROJECT EXPENDITURES					
(APPLICATION - Give estimated dollar amount of Federal funds required. REPORT - Give actual expenditures and unliquidated obligations.)					
A. BY EXPENDITURE ACCOUNTS (See OE Handbook II)	SALARIES (a)	CONTRACTED SERVICES & OTHER EXPENDITURES (b)	TOTAL AMOUNT (c)	B. BY TYPE OF HANDICAPPED CHILDREN BENEFITING	AMOUNTS (d)
ABCD					
(1) Administration (100)	\$	\$	\$ 65,000	(1) Trainable Mentally Retarded	\$
(2) Instruction (200)				(2) Educable Mentally Retarded	
(3) Attendance Services (300)				(3) Learning Disabled	65,000.00
(4) Health Services (400)				(4) Emotionally Disturbed	
(5) Pupil Transportation (500)				(5) Other Health Impaired	
(6) Operation of Plant (600)				(6) Crippled	
(7) Maintenance of Plant (700)				(7) Visually Handicapped	
(8) Fixed Charges (800)				(8) Deaf-blind	
(9) Food Services (900)				(9) Deaf	
(10) Student Body Activities (1000)				(10) Hard of Hearing	
(11) Community Services (1100)				(11) Speech Impaired	
(12) SUB-TOTAL (100 thru 1100)	\$	\$	\$ 65,000	(12) TOTAL HANDICAPPED	\$
(13) Sites (1210)				C. BY SPECIAL CATEGORIES	
(14) Buildings (1220A and B)				(1) Preschool Project Activities	\$ 12,500.00
(15) Remodeling (1220C)				(2) Voc-ed Project Activities	
(16) Equipment for Instruction (1230C)				(3) Inner City Project Activities	12,000.00
(17) Other Equipment (1230 except C)				(4) Minority Group Project Activities	
(18) CAPITAL OUTLAY (1200 series)				(5) Inservice Training of Staff	\$6500.00
(19) GRAND TOTAL (Sum of both sub-totals)			\$ 65,000	(6) Parent Services	2000.00

APPENDIX A (Cont.)

13. PROJECT PARTICIPANTS																						
A. CHILDREN RECEIVING SERVICES						B. PROJECT PERSONNEL PAID FROM FEDERAL PROJECT FUNDS				C. PERSONNEL RECEIVING INSERVICE TRAINING FROM FEDERAL PROJECT FUNDS												
TYPE OF HANDICAPPED CHILDREN SERVED	NUMBER OF CHILDREN SERVED					TOTAL SCHOOL DAYS (h)	NUMBER OF PERSONNEL PAID				NUMBER OF PERSONNEL TRAINED				CLOCK HOURS PROVIDED (r)							
	0-2 YEARS (a)	3-5 YEARS (b)	6-9 YEARS (c)	10-12 YEARS (d)	13-18 YEARS (e)		19 AND OVER (f)	TEACH. CHERS (i)	TEACH. AIDES (j)	OTHER PERS. (k)	TOTAL PERS. (l)	TEACH. CHERS (m)	TEACH. AIDES (n)	OTHER PERS. (p)		TOTAL PERS. (q)						
(1) Trainable Mentally Retarded																						
(2) Educable Mentally Retarded																						
(3) Learning Disabled	2,000 to be determined with Standardization of Instrument																					
(4) Emotionally Disturbed																						
(5) Other Health Impaired																						
(6) Crippled																						
(7) Visually Handicapped																						
(8) Deaf-blind																						
(9) Deaf																						
(10) Hard of Hearing																						
(11) Speech Impaired																						
(12) TOTAL																						
E. MISCELLANEOUS INFORMATION																						
D. CHILDREN RECEIVING SERVICES BY DEMOGRAPHIC AREA						NUMBER (a)	(1) Children participating in preschool activity in this project		(2)		(6) Number of American Indian children involved in this project		(7) Number of Negro children involved in this project		(8) Number of Oriental children involved in this project		(9) Number of Spanish surnamed children involved in this project		(10) Number of parents receiving direct services through project funds		(11) Number of non-paid volunteers participating in this project	
(1) From inner city areas						500	(2) Students participating in vocation activity in this project															
(2) From other urban areas (over 50,000)						500	(3) Multihandicapped children for whom components of this project were especially designed		500													
(3) From rural areas (under 2,500)						500	(4) Children enrolled in nonpublic schools		500													
(4) From other demographic areas (From 2,500 to 50,000)						500	(5) Additional children receiving only incidental services (not previously reported in this form)															
(5) TOTAL (Lines D. (1)-(4))						2,000																

APPENDIX A (Cont.)

14. ABSTRACT (Limit to the number of lines and space provided)

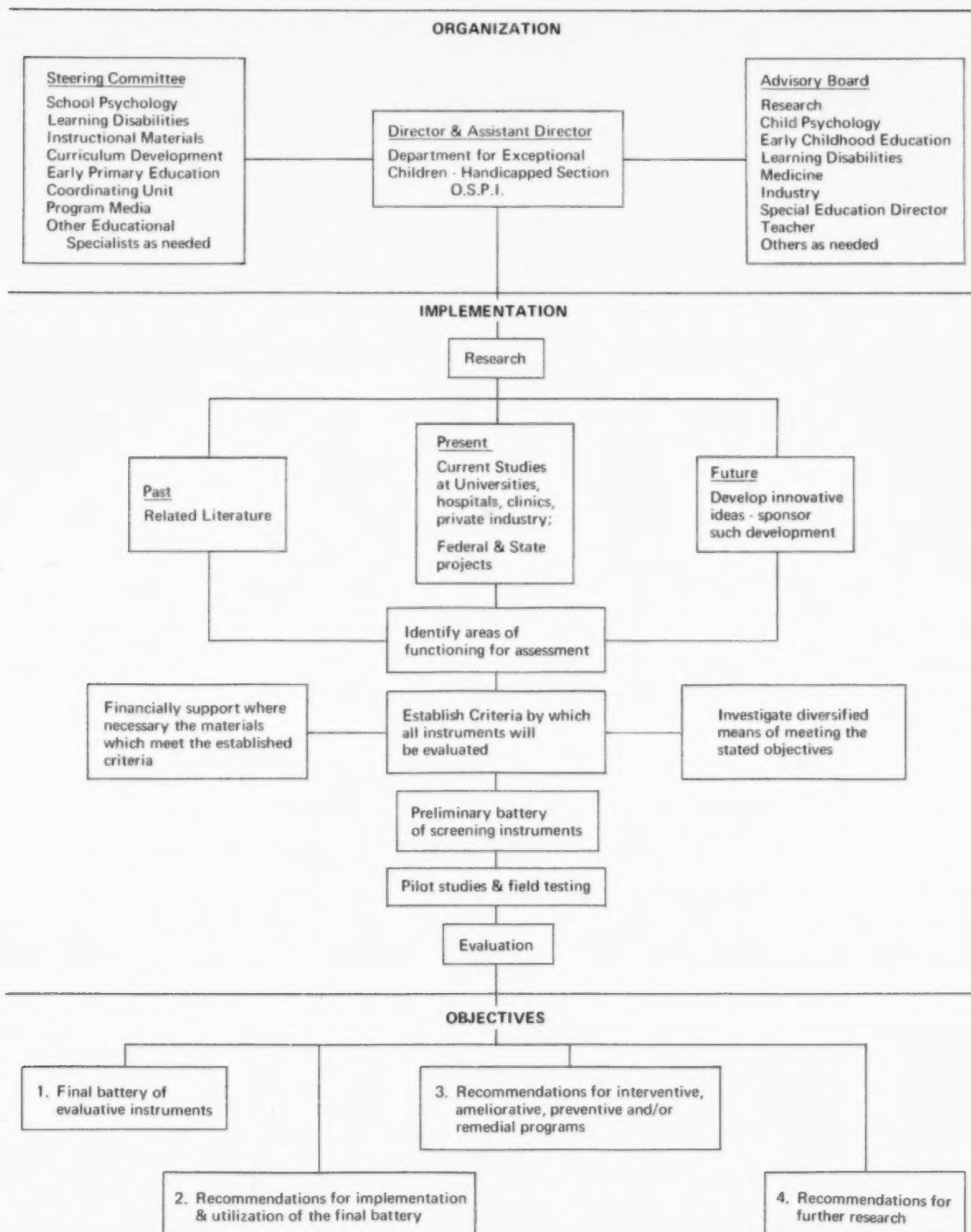
A	The primary focus of this project will be screening and identification of pre-school children with
B	potential learning problems. Based upon a behavioral conceptual model, an acceptable set of evaluative
C	instruments will be developed for identification of potential learning disabilities in children 0-6
D	years of age. This objective will take form in a handbook written on a Chronological age outline and
E	rated per age year by functional profile. Field testing of this handbook and revision of behaviors will
F	finalize with recommendations for implementation, utilization and intervention of programs for preschool
G	children with learning problems.
H	
I	
J	
K	
L	
M	
N	
O	
P	
Q	
R	

DESCRIPTORS (Enter the number only of terms selected from ASIS Retrieval Terms Directory. See Instructions)

NUMBER

APPENDIX B

ORGANIZATION – IMPLEMENTATION – OBJECTIVES OSPI LEARNING DISABILITIES/EARLY CHILDHOOD RESEARCH PROJECT



APPENDIX C

**INSTRUMENTS FOR SCREENING OF
PREKINDERGARTEN CHILDREN**

Office of the
Superintendent of
Public Instruction
State of Illinois
Michael J. Bakalis
Superintendent

October, 1972

This is a working document of instruments for the identification of Prekindergarten, High-Risk Children. The intent of the table and bibliography is to create an awareness of available instruments and their components rather than to assess their effectiveness.

The components that are listed in the table were all found within test manuals. The term "Administrator" or "Testor" states a title rather than the degree of training. Performance factors that are checked are based on test claims as well as authors' judgment. Rating scales which require subjective judgment (with or without the child's presence) are separated from objective measurement gained through test participation.

The four major sources for compiling this information were:

- 1). Regenstein Library
Curriculum Laboratory
University of Chicago
Chicago, Illinois
- 2). Buross, O.
7th Mental Measurement
Yearbook
- 3). Butler, A.
Literature Search & Development
of an Evaluation System in Early
Childhood Education
Indiana University
- 4). C.S.E./E.C.R.C.
Pre-School/Kindergarten
Test Evaluations
U.C.L.A.

Specific references for each instrument (Author, Publisher, and Address) can be found in the attached bibliography.

Compiled by
Carol D. Mardell, Ph.D.
Dorothea S. Goldenberg, M.A.
Handicapped Children Section
188 West Randolph
Chicago, Illinois 60601

KEY FOR READING THE FOLLOWING TABLE INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN

A. Age Range Tested (2-6)

B. Depth (Screening-Diagnostic)

C. Administration Factors

1. Group-Individual
2. Time Needed to Complete
3. Paced-Untimed-Timed
4. Administrator
 - a. T - Trained
 - b. N - No Training Necessary
 - c. Py - Psychologist
 - d. M - Medical Doctor
 - e. P - Parent

D. Response During Test (Vocal-Motor)

E. Performance Factors

1. Auditory Discrimination
2. Articulation
3. Language
4. Developmental
5. Visual Perception
6. Motor
7. School Readiness
8. Social Skills
9. Self-Concepts
10. Conceptual Skills

F. Measurements Requiring Subjective Judgment with/without Child

1. Rating scales by parent
2. Rating scales by teacher
3. Interview
4. Observation

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN

	(A)								(B)		(C)							(D)		(E)							(F)							
	2	2.5	3	3.5	4.5	5	5.5	6	Screening	Diagnostic	Individual	Group	Test Time	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Discr.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Social Skills	Self Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observation	
ABC INVENTORY						X	X	X	X		X		8		X		T	X	X							X								
ANIMAL PICTURE Q SORT			X	X	X	X	X	X	X		X				X		T	X	X							X								
ANTON BRENNER DEVELOPMENTAL						X	X	X	X	X	X		3 10		X		T	X	X					X	X	X								
ARIZONA ARTICULATION PROFICIENCY		X	X	X	X	X	X	X	X	X	X		20 30		X		T	X	X	X	X													
ARTHUR ADAPTATION OF LETTER	X	X	X	X	X	X	X	X	X		X						T		X					X	X									
ARTHUR POINT SCALE				X	X	X	X	X	X	X	X					X	T		X					X	X									
ASSESSMENT OF CHILDREN'S LANGUAGE COMPREHENSION				X	X	X			X		X		10		X		T	X	X			X												
ASSESSMENT PROGRAM OF EARLY LEARNING LEVELS				X	X	X	X	X	X	X	X		40	X			N		X								X							
AUDITORY DISCRIMINATION TEST						X	X	X	X	X	X		5				T	X	X	X														
AYRES SPACE TEST		X	X	X	X	X	X	X	X	X	X		10 20			X	T		X						X									

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN (Cont.)

	(A)										(B)		(C)					(D)		(E)								(F)								
	2	2.5	3	3.5	4	4.5	5	5.5	6		Screening	Diagnostic	Individual	Group	Test Time	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Discr.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Social Skills	Self-Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observation	
BASIC CONCEPT INVENTORY					X	X	X	X	X		X	X	X	20	X		X	T		X	X						X									
BAYLEY SCALES OF INFANT DEVELOPMENT	X	X	X	X	X	X	X	X	X		X		X	45	X			T		X	X				X		X									
BENDER GESTALT TEST FOR YOUNG CHILDREN – KOPPITZ METHOD							X	X	X		X	X	X	10	X			T			X				X		X									
BINGHAM BUTTON TEST		X	X	X	X	X	X	X	X		X		X	20	X			T		X	X				X		X									
BIRTHDAY TEST				X	X	X	X	X	X				X		X			N		X																
BLUM-FIELDSTEEL		X	X	X	X	X	X	X	X		X		X	30				T		X	X				X											
BOEHM TEST OF BASIC CONCEPTS						X	X	X	X		X		X	15 X 20				T		X	X						X									
BOOK ABOUT ME				X	X	X	X	X	X		X		X			X		T		X	X															
BROWN IDS SELF CONCEPTS REFERENCE TEST				X	X	X	X	X	X		X		X				X			X																
CALIFORNIA PRESCHOOL SOCIAL COMPETENCY SCALE	X	X	X	X	X	X	X	X	X		X		X	10 20				T			X							X							X	

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN (Cont.)

	(A)								(B)		(C)						(D)		(E)								(F)								
	2	2.5	3	3.5	4	4.5	5	5.5	6	Screening	Diagnostic	Individual	Group	Test Time	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Disc.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Social Skills	Self-Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observations	
CALIFORNIA TEST OF PERSONALITY							X	X	X	X	X	X	X	45	X	X	T		X	X								X	X						
CHILD BEHAVIOR RATING SCALE							X	X	X			X	5 10						X	X								X	X						
CHILD DEVELOPMENT QUESTION-NAIRE			X	X	X	X	X	X	X	X		X	15		X	X	P		X	X		X					X	X	X			X			
CHILDREN'S ADDITIONAL RANGE INDICATOR							X	X	X				X	30	X	X	N		X	X								X							
CHILDREN'S AUDITORY DISCRIMINATION INVENTORY		X	X	X	X							X					T		X	X	X							X							
CHILDREN'S EMBEDDED FIGURE TEST						X	X	X	X	X	X	X	10 25		X		T			X				X											
CHILDREN'S PROJECTIVE PICTURES OF SELF CONCEPT			X	X	X	X	X	X	X	X	X	X				X	T		X									X							
CHILDREN'S SELF-SOCIAL CONSTRUCTS TESTS			X	X	X	X	X	X	X	X	X	X	10		X	X	T											X							
CINCINNATI AUTONOMY TEST BATTERY		X	X	X	X					X	X	X			X	X	T		X	X								X	X	X					

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN (Cont.)

	(A)										(B)		(C)							(D)		(E)								(F)				
	2	2.5	3	3.5	4	4.5	5	5.5	6	Screening	Diagnostic	Individual	Group	Test Time	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Discr.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Social Skills	Self-Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observation
COLOR MEANING PICTURE TEST			X	X	X	X	X	X	X			X		X				N	X	X								X						
CONCEPT ASSESSMENT KIT				X	X	X	X	X	X		X	X	15				X	T	X					X			X							
COOPERATIVE PRESCHOOL INVENTORY REVISED EDITION			X	X	X	X	X	X	X	X		X	15				T		X	X				X	X	X	X		X					
DADE COUNTY TEST OF LANGUAGE DEVELOPMENT											X	X					T		X															
DAILEY LANGUAGE FACILITY TEST			X	X	X	X	X	X	X	X		X	10		X		N		X	X			X											
DENVER DEVELOPMENTAL SCREENING TEST	X	X	X	X	X	X	X	X	X	X		X	15 20		X		T		X	X			X	X	X	X	X	X		X				
DEVELOPMENTAL POTENTIAL OF PRE-SCHOOL CHILDREN	X	X	X	X	X	X	X	X	X		X	X			X		T		X	X			X	X	X	X	X	X						
DEVELOPMENTAL TEST OF VISUAL MOTOR INTEGRATION	X	X	X	X	X	X	X	X	X	X	X	X	10		X		T		X					X										
EARLY DETECTION INVENTORY		X	X	X	X	X	X	X	X	X		X	15	X			T		X	X				X	X	X	X	X	X	X	X	X		

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN (Cont.)

	(A)										(B)		(C)						(D)		(E)							(F)						
	2	2.5	3	3.5	4	4.5	5	5.5	6	Screening	Diagnostic	Individual	Group	Test Time	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Disc.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Social Skills	Self-Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observation
EARLY EDUCATION SCREENING TEST BATTERY OF BASIC SKILLS DEVELOP- MENT					X	X	X	X	X	X		X		30			T		X	X			X			X								
EARLY IDENTIFICATION – MEETING STREET SCHOOL TEST						X	X	X	X	X	X	X		30	X		T		X	X			X	X	X	X	X		X					
ECHOIC RESPONSE INVENTORY FOR CHILDREN		X	X	X	X	X	X	X	X	X		X		15	X		N		X	X		X	X				X							
EVANSION EARLY IDENTIFICATION SCALE							X	X	X	X		X	X	10 55	X				X						X	X		X						
EXPRESSIVE VOCABULARY INVEN- TORY			X	X	X	X	X	X	X		X	X				X	T		X				X							X				
FROSTIC DEVELOPMENTAL TEST OF VISUAL PERCEPTION		X	X	X	X	X	X	X	X		X	X	X	60	X		T		X	X				X	X									
FULL RANGE PICTURE VOCABULARY TEST	X	X	X	X	X	X	X	X	X	X	X	X		10 15	X		T		X	X			X											
GESELL DEVELOPMENTAL KIT							X	X	X	X	X	X		20 30	X		T		X	X	X			X	X	X	X	X	X	X	X		X	

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN (Cont.)

	(A)										(B)		(C)						(D)		(E)						(F)							
	2	2.5	3	3.5	4	4.5	5	5.5	6	Screening	Diagnostic	Individual	Group	Test Time	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Discr.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Social Skills	Self-Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observation
GOLDMAN FRISTOE TEST OF ARTICULATION	X	X	X	X	X	X	X	X	X	X	X	X	10				T		X				X				X							
GOLDMAN FRISTOE WOODCOCK TEST OF AUDITORY DISCRIMINATION				X	X	X	X	X	X	X	X	X	15 20				T				X													
GOODENOUGH HARRIS DRAWING TEST			X	X	X	X	X	X	X	X	X	X	15		X		T			X	X		X	X		X								
GUMPGOOKIES			X	X	X	X	X	X	X	X	X	X		X			T		X	X								X						
HEJNA DEVELOPMENTAL ARTICULATION TEST		X	X	X	X	X	X	X	X	X	X	X			X		T		X			X												
HOLBORN VOCABULARY TEST FOR YOUNG CHILDREN					X	X	X	X	X	X	X	X				X	T		X				X											
HOUSTON TEST FOR LANGUAGE DEVELOPMENT	X	X								X	X	X	30		X		T		X	X		X	X	X										
ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITIES	X	X	X	X	X	X	X	X	X	X	X	X	60	X			T		X	X		X	X				X	X						

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN (Cont.)

	(A)										(B)		(C)					(D)			(E)							(F)						
	2	2.5	3	3.5	4	4.5	5	5.5	6	Screening	Diagnostic	Individual	Group	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Discr.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Social Skills	Self-Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observation	
INTER AMERICAN SERIES - PRIMARY			X	X	X	X	X	X	X		X	X	$\frac{46}{50}$				T		X		X				X									
KATZ AUDITORY SCREENING TEST						X	X	X	X	X		X	X	X	X	T		X	X	X	X	X												
LANGUAGE FACILITY TEST		X	X	X	X	X	X	X	X		X	X	10			T		X		X	X	X												
LINCOLN-OSERETSKY MOTOR DEVELOPMENT SCALE								X		X	X	$\frac{29}{30}$				T		X						X										
McCANDLESS MARSHALL PLAY INTERACTION			X	X	X	X					X	X	100				T		X									X						
McCANDLESS MARSHALL SOCIOMETRIC STATUS PICTURE TEST			X	X	X	X				X	X	X	$\frac{3}{15}$			N			X									X						
McCARTHY SCALE OF CHILDREN'S ABILITIES	X	X	X	X	X	X		X	X	X	X	X	60			X	T		X	X		X	X	X	X	X	X			X				
MINNESOTA PRESCHOOL SCALE	X	X	X	X	X	X		X	X		X	X				T		X	X					X	X	X				X				
MINNESOTA SOCIOMETRIC STATUS		X	X	X	X	X					X	X																X						

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN (Cont.)

	(A)										(B)		(C)							(D)		(E)								(F)						
	2	2.5	3	3.5	4	4.5	5	5.5	6	Screening	Diagnostic	Individual	Group	Test Time	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Disc.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Social Skills	Self-Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observation		
MSU PUZZLE BOX TASK			X	X	X	X				X		X					X	T	X				X	X	X											
MUMMERY SCALE OF ASCENDANT BEHAVIOR			X	X	X	X	X						5												X	X									X	
PARENT READINESS EVALUATION OF PRESCHOOLERS		X	X	X	X	X	X			X		X ⁹⁰	X				P		X	X			X	X	X	X						X				
PARSONS LANGUAGE SAMPLE				X	X	X	X				X	X					T		X	X			X	X												
PEABODY PICTURE VOCABULARY TEST	X	X	X	X	X	X	X	X	X	X		X	X	10 15	X		T		X				X													
PREKINDERGARTEN GOAL CARD				X	X	X	X			X		X		X			N		X	X					X	X	X	X	X							
PREPRIMARY PROFILE				X	X	X	X	X	X	X		X	15				P		X	X			X	X	X	X	X	X	X	X	X	X				
PRESCHOOL ATTAINMENT RECORD	X	X	X	X	X	X	X	X	X	X		X	15 20	X			T		X						X	X	X	X	X	X		X			X	
PRESCHOOL LANGUAGE SCALE	X	X	X	X	X	X	X	X	X	X		X	30				T		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN (Cont.)

	(A)										(B)		(C)					(D)		(E)								(F)						
	2	2.5	3	3.5	4	4.5	5	5.5	6	Screening	Diagnostic	Individual	Group	Test Time	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Discr.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Social Skills	Self-Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observation
PRESCHOOL SELF-CONCEPT PICTURE TEST					X	X	X				X	X	10 20		X		T		X	X								X						
QUICK TEST	X	X	X	X	X	X	X	X	X	X		X	3 10				T		X				X											
REYNELL DEVELOPMENTAL LANGUAGE	X	X	X	X	X	X	X	X	X		X	X	20				T						X											
RILEY ARTICULATION AND LANGUAGE TEST							X	X	X	X		X	1 2	X			T		X			X	X											
RILEY PRESCHOOL DEVELOPMENT SCREENING INVENTORY			X	X	X	X	X	X	X	X		X	3 10		X		T			X			X	X	X	X	X	X	X					
RING & PEG TESTS OF BEHAVIOR DEVELOPMENT	X	X	X	X	X	X	X	X	X		X	X	20 50		X		T		X	X			X	X	X	X	X	X	X					
SCHOOL READINESS CHECKLIST - READY OR NOT							X	X	X	X		X	10 20		X		P		X	X							X	X				X		
SCHOOL READINESS SURVEY				X	X	X	X	X	X	X	X	X	15 30		X		P		X	X				X			X					X		
SCREENING TEST FOR THE ASSIGNMENT OF REMEDIAL TREATMENTS				X	X	X	X	X	X	X		X	X	60			X	T							X	X	X							

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN (Cont.)

	(A)										(B)		(C)						(D)		(E)								(F)							
	2	2.5	3	3.5	4	4.5	5	5.5	6	Screening	Diagnostic	Individual	Group	Test Time	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Discr.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Special Skills	Self-Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observation		
SCREENING TEST OF ACADEMIC READINESS					X	X	X	X	X	X		X	X	60		X	N									X										
SPRIGLE SCHOOL READINESS SCREENING TEST					X	X	X	X	X	X		X		8 12			M		X	X			X				X									
TEMPLIN-DARLEY SCREENING AND DIAGNOSTIC TESTS OF ARTICULATION			X	X	X	X	X	X	X	X		X		5 15	X		T		X			X														
TEST OF BASIC EXPERIENCES					X	X	X	X	X				X	125	X		N		X							X										
THOMAS SELF CONCEPT VALUES TEST			X	X	X	X	X	X	X			X		15		X	T		X											X						
VALETT DEVELOPMENTAL SURVEY OF BASIC LEARNING ABILITIES			X	X	X	X	X	X	X	X		X		30 60	X		T		X	X			X		X	X										
VAN ALSTYNE PICTURE VOCABULARY TEST			X	X	X	X	X	X	X			X		15	X		T		X				X													
VANE KINDERGARTEN TEST					X	X	X	X	X	X		X	X	35	X		P Y		X	X			X	X	X	X	X									
VERBAL LANGUAGE DEVELOPMENT SCALE	X	X	X	X	X	X	X	X	X	X				30			P T		X	X			X	X									X	X	X	X

INSTRUMENTS FOR THE IDENTIFICATION OF PREKINDERGARTEN HIGH RISK CHILDREN (Cont.)

	(A)										(B)			(C)						(D)		(E)								(F)				
	2	2.5	3	3.5	4	4.5	5	5.5	6	Screening	Diagnostic	Individual	Group	Test Time	Paced	Untimed	Timed	Administrator	Vocal Response	Motor Response	Auditory Disc.	Articulation	Language	Developmental	Visual Perception	Motor	School Readiness	Social Skills	Self-Concepts	Conceptualization	Rated by Parent	Rated by Teacher	Interview	Observation
VINELAND SOCIAL MATURITY SCALE	X	X	X	X	X	X	X	X	X		X	X				X	T		X									X						
VISUAL MOTOR GESTALT TEST			X	X	X	X	X	X	X		X	X	10			X	T			X					X	X								
WALKER READINESS TEST FOR DIS-ADVANTAGED PRESCHOOL CHILDREN IN THE UNITED STATES					X	X	X	X	X		X	X			X		T		X							X	X	X	X					
GESELL DEVELOPMENTAL SCHEDULE	X	X	X	X	X	X	X	X	X	X	X	X				X	M		X	X			X	X	X	X	X	X	X					

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APPENDIX D

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APPENDIX E

OBSERVATIONAL RATING

1. Separates from Adult
 - a. no hesitation - leaves adult comfortably and moves into DIAL station immediately
 - b. mild hesitancy to leave adult but does move into DIAL station
 - c. refuses to move into DIAL either with adult/or alone
2. Gait
 - a. smooth and regular muscle patterns
 - b. muscle action shows some coordination difficulty
 - c. no gait - separate movements independent of each other
3. Squints
 - a. much - action evident throughout area tasks
 - b. some - action evident during area tasks
 - c. none - no action evident during area tasks
4. Cries
 - a. much - action evident throughout area tasks
 - b. some - action evident during area tasks
 - c. none - no action evident during area tasks
5. Babbles
 - a. much - action evident throughout area tasks
 - b. some - action evident during area tasks
 - c. none - no action evident during area tasks
6. Test Limits
 - a. much - consistently attempts to gain control of testing situation but does perform area tasks
 - b. some - will attempt to gain control at some time during the test situation but does perform area tasks
 - c. none - does not attempt to gain control of testing situation
7. Eye Contact
 - a. much - consistent eye to eye behavior during testing
 - b. some - eye to eye behavior at some time during area tasks
 - c. none - avoids eye contact during area tasks
8. Thumb Sucking
 - a. much - action evident throughout area tasks
 - b. some - action evident during area tasks
 - c. none - no action evident during area tasks
9. Nose Picking/Prodding
 - a. much - action evident throughout area tasks
 - b. some - action evident during area tasks
 - c. none - no action evident during area tasks
10. Cooperative/Enthusiastic
 - a. much - pleasant behavior throughout area tasks
 - b. some - pleasant behavior during area tasks
 - c. none - resistive behavior during area tasks

APPENDIX E (Cont.)

11. Curiosity
 - a. much - questions throughout area tasks
 - b. some - questions during area tasks
 - c. none - no questions during area tasks
12. Repeats What He Says or Does
 - a. much - repetition throughout area tasks
 - b. some - repetition during area tasks
 - c. none - no repetition during area tasks
13. Needs Directions Repeated
 - a. much - consistently shows need for repeating throughout area tasks
 - b. some - need for repeating during area tasks
 - c. none - no need for repeating during area tasks
14. Laughs/Sense of Humor
 - a. much - action evident throughout area tasks
 - b. some - repetition during area tasks
 - c. none - no repetition during area tasks
15. Drools
 - a. much - saliva involuntarily released from child's mouth throughout area tasks
 - b. some - saliva visibly evident but not released during area tasks
 - c. none - no presence of saliva during area tasks
16. Persistence/Sticks to Tasks
 - a. much - keeps trying to succeed throughout area tasks
 - b. some - action evident to succeed during area tasks
 - c. none - no action evident to succeed during area tasks
17. Tongue Movements/Thrusts
 - a. much - visible presence of tongue throughout area tasks
 - b. some - visible presence of tongue during area tasks
 - c. none - no visible presence of tongue during area tasks
18. Distracted
 - a. much - limited attention throughout area tasks
 - b. some - interrupted attention during area tasks
 - c. none - no attention difficulties during area tasks
19. Unusual Responses

Note any behavior seen by operator and considered atypical

Appendix F

DIAL REGISTRATION

YR. MO. DAY

CHILD'S NAME _____ TODAY'S DATE _____

ADDRESS _____ BIRTHDATE _____

PHONE _____ CHILD'S AGE _____

FATHER/MOTHER OCCUPATION _____

	SEX	BIRTHDATE
BROTHERS AND/OR SISTERS	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____

CURRENT PLACEMENT (X) _____

AT HOME _____

NURSERY SCHOOL _____

DAY CARE CENTER _____

OTHER _____ (Please specify)

APPENDIX G SCORESHEET I

NAME _____ ADDRESS _____ AGE _____ PHONE _____

General Observations	Sense of humor	Gross Motor	Fine Motor	8. Fingers
Separates from mother	Drools	Shoes On Off	1. Block Tower O D C	0 1 B
Unsteady gait	Distractible	1. Balance Beam 0' 1' 2' 3' 4' 5' 6'	2. Block Bridge O D C	9. Clapping 0 1 2 3
Squints	Tongue movements	2. Throwing 0 1 2 3 Picks R L Throws R L	3. 6 Block Pyramid O D C	10. Copying D N E S
Cries		3. Catching 0 1 2 3	4. 10 Block Pyramid O D C	
Does not talk		4. Jumping 0 1 B	5. Cutting Line O D C	
Tests limits		5. Hopping 0 1 2 3 4 5 R L	6. Cutting Curve O D C	
Confused or disoriented		6. Skipping O D C	7.  O D C	
No eye contacts		7. Standing 0" — 30"	 O D C	
Conforms		8. Height — Inches	 O D C	
Goes from task to task		9. Head — Centimeters	 O D C	
Thumb sucking			 O D C	
Nose picking and/or prodding				
Cooperative				
Enthusiastic				
Unusual responses				
Repeats what he says or does				
Needs directions repeated				

APPENDIX G (Cont.)

Conceptual	10. Concepts	Communications	12. Problem Solving II
1. Designs 0 1 2 3 4 5 6 7 8 9 10	Big, Empty, Fast, More, Long, Day, Hot, Little, Full, Slow, Less, Short, Night, Cold	1. Articulation pup moon knife pig hen web bed king goat fork dime yellow	
2. Process (Blocks in Bag) Complete Distracted Eye Contact Hyperactive Seeks Adult Aid Non-Communicating Behavior Self Stimulating Behavior	11. Name Recognition 0 1 B	2. Digit Span 3. Sentences 0 1 2 3 0 1 2 3	13. Classification
3. Color Labels R Y B G O P		4. Object Labels Cat, Car, Dog, Train, Fish, Plane, Horse, TV, Girl, Phone	
4. Color Identification R Y B G O P		5. Object Identification Phone, Girl, TV, Horse, Plane Fish, Train Dog, Car, Cat	
5. Number Concepts 0 3 5 7 9		6. Action Labels Sleep, Eat, Swim Fly, Walk, Wash	
6. Rote Counting 0 1 2 3 4 5 6 7 8 9 10		7. Action Identification Wash, Walk, Fly Swim, Eat, Sleep	
7. Body Parts Nose, Ears, Neck, Hips, Knee, Elbow, Shoulders, Ankle, Chin, Wrist		8. Self Identification O N V	
8. Prepositions On, Front, Under Beside, Back		9. Name 10. Age O 1 B O N V	
9. Directions 0 1 2 3		11. Problem Solving I	

APPENDIX H SCORESHEET II

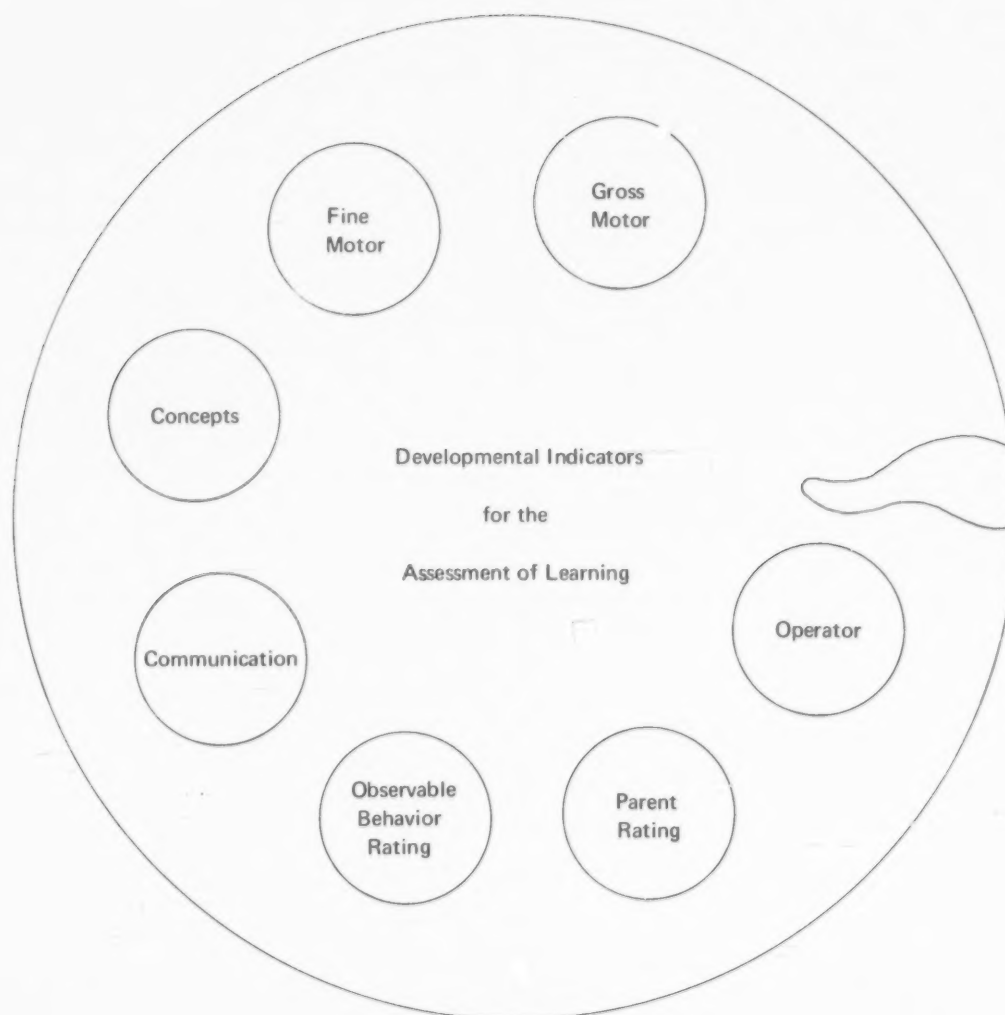
NAME _____ AGE _____
ADDRESS _____ PHONE _____

Gross Motor	Process (Blocks in Bag)	Fine Motor	Conceptual
Shoes On	Eye contact	1. Block Tower O D C	1. Shapes 0 1 2 3 4 5 6 7 8 9 10
Balance Beam 0' 1' 2' 3' 4' 5' 6'	Noncommunicating language	2. Block Bridge O D C	2. Process (Blocks in Bag)
Throwing Picks R L 0 1 2 3 Throws R L	Self-stimulating behaviors	3. 6 Block Pyramid O D C	3. Color Labels Y B G O P
Catching 0 1 2 3	Abstracted	4. 10 Block Pyramid O D C	4. Color Identification R Y B G O P
Jumping 0 1 B	Hyperactive	5. Cutting Line R L O D C	5. Number Concepts 0 3 5 7 9
Hopping 0 1 2 3 4 5	Short attention span	6. Cutting Curve O D C	6. Rote Counting 0 1 2 3 4 5 6 7 8 9 10
Skipping O D A	Conscious	7.  O D C	7. Body Parts Nose, Neck, Ankle, Knee, Wrist, Ears, Elbow, Chin, Shoulders, Hips
Standing 0" 45"	Hypervocal	 O D C	8. Prepositions On, Front, Under, Beside, Back
Height "	Asks adult aid	 O D C	9. Concepts Big, Cold, Fast, More, Long, Day, Empty, Little, Hot, Slow, Less, Short, Night, Full
Head "	Task completion	 O D C	10. Name Recognition 0 1 B
		• • • • • • • • • • • •	

APPENDIX H (Cont.)

Communications		11. Problem Solving II
1. Digit Span 0 1 2 3		12. Classifications
2. Sentences 0 1 2 3		13. Picture Story
3. Self Identification O N V		14. Articulation pop moon knife pig hen web bed king goat fork dime yellow
4. Name 0 1 B		
5. Age O N V		
6. Labels Cat, Car, Dog, Train, Fish, T.V., Plane, Horse, Girl, Phone		
7. Object Identification Cat, Car, Dog, Train Fish, T.V., Plane, Horse, Girl, Phone		
8. Action Labels		
9. Action Identification Sleeping, Flying, Eating, Walking, Swimming, Washing		
10. Problem Solving I		

APPENDIX I
INSERVICE PACKET
DIAL DIRECTORY



WHO: CHILDREN AGES 3-5
as of Dec. 1, 1972

WHEN:

WHAT: Developmental Assessment
Field Testing - DIAL

WHY: DIAL - Operator
for Further Information

WHERE:

APPENDIX J

STATE OF ILLINOIS
OFFICE OF THE SUPERINTENDENT OF PUBLIC INSTRUCTION
MICHAEL J. BAKALIS, SUPERINTENDENT
Handicapped Children Section
Room 1400
188 West Randolph Street
Chicago, Illinois 60601

PROJECT D.I.A.L. SCORE SHEET

INSTRUCTIONS: Complete one form per child and return to your field coordinator. Circle or check items as applicable.

NAME OF CHILD		BIRTH DATE (Month Day Year)	DATE TODAY	CHRONOLOGICAL AGE
---------------	--	--------------------------------	------------	-------------------

GROSS MOTOR		CONCEPTS	
1. Balance Beam Distance (ft.) 1 2 3 4 5 6 2. Throw: Under Hand 0 1 2 3 R L Over Hand 0 1 2 3 R L 3. Catching No. of Throws 0 1 2 3 4. Jumping Number of feet Landed 0 One Both 5. Hopping Number of Hops 0 1 2 3 4 5 R L 6. Skipping ☐ No Response ☐ Doesn't Complete ☐ Completed 7. Standing ☐ 0" ☐ 0 29" ☐ 30" 8. Body Parts ☐ Nose ☐ Elbow ☐ Ear ☐ Ankle ☐ Neck ☐ Chin ☐ Hip ☐ Wrist ☐ Knee ☐ Shoulder 9. Height _____ Inches 10. Head _____ Inches	1. Process ☐ completed ☐ distracted ☐ eye contact ☐ hyperactive ☐ seeks adult aid ☐ non comm. beh. ☐ self stim. beh. ☐ partial sort 2. Color label red yellow blue green orange purple 3. Color ID red yellow blue green orange purple 4. Number Concepts 0 3 5 7 or 9 blocks 5. Rote Count 0 1 2 3 4 5 6 7 8 9 10+ 6. Prepositions ☐ on ☐ front ☐ under ☐ beside ☐ back 7. Directions 0 1 2 3 8. Concepts ☐ big ☐ day ☐ short ☐ fast ☐ more ☐ full ☐ hot ☐ little ☐ night ☐ tall ☐ slow ☐ less ☐ empty ☐ cold 9. Name Recognition 0 1 B		

Observations:

Observations:

FINE MOTOR		COMMUNICATIONS																																			
1. Designs 0 1 2 3 4 5 6 7 8 9 10 No Response Doesn't Complete Completed 2. Block Tower 0 D C 3. Block Bridge 0 D C 4. 6 Block Pyramid 0 D C 5. 10 Block Pyramid 0 D C 6. Cutting Line 0 D C R L 7. Cutting Curve 0 D C R L 8. Drawing Figures O 0 D C + 0 D C □ 0 D C △ 0 D C ... 0 D C 9. Letter Copying D 0 D C N 0 D C E 0 D C S 0 D C 10. Finger Agility 0 1 B 11. Clapping Tests Complete 0 1 2 3 Tests	1. Articulation ☐ bed ☐ rat ☐ hammer ☐ moon ☐ knife ☐ garbage ☐ pop ☐ king ☐ zipper ☐ toe ☐ fork ☐ sandwich ☐ dog ☐ thumb ☐ web ☐ fish 2. Digit Span Repeated 0 1 2 3 3. Sentences Repeated 0 1 2 3 4. Picture Cards <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <th></th> <th>Obj.</th> <th>Act.</th> <th></th> <th>Obj.</th> <th>Act.</th> </tr> <tr> <td>cat</td> <td>L I</td> <td>L I</td> <td>bird</td> <td>L I</td> <td>L I</td> </tr> <tr> <td>car</td> <td>L I</td> <td>L I</td> <td>horse</td> <td>L I</td> <td>L I</td> </tr> <tr> <td>dog</td> <td>L I</td> <td>L I</td> <td>T.V.</td> <td>L I</td> <td>L I</td> </tr> <tr> <td>train</td> <td>L I</td> <td>L I</td> <td>girl</td> <td>L I</td> <td>L I</td> </tr> <tr> <td>fish</td> <td>L I</td> <td>L I</td> <td>phone</td> <td>L I</td> <td>L I</td> </tr> </table> 5. Self ID 0 N V 6. Name 0 1 B 7. Age 0 N V 8. Classification 0 1 2 3 4 5 6 7 8 9 10 10+ 9. Problem I _____ NV _____ NV _____ NV _____ NV 10. Problem II _____ NV _____ NV 11. Picture Story _____ NV _____ NV _____ NV		Obj.	Act.		Obj.	Act.	cat	L I	L I	bird	L I	L I	car	L I	L I	horse	L I	L I	dog	L I	L I	T.V.	L I	L I	train	L I	L I	girl	L I	L I	fish	L I	L I	phone	L I	L I
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dog	L I	L I	T.V.	L I	L I																																
train	L I	L I	girl	L I	L I																																
fish	L I	L I	phone	L I	L I																																

Observations:

Observations:

APPENDIX K

MEMORANDUM

November 1971

TO: Directors of Special Education and all Interested Parties

FROM: Carol Mardell, Educational Specialist

SUBJECT: Learning Disabilities/Early Childhood Research Project -- Progress Report

Our early identification project is moving through the research phase as listed in your organizational objective chart. Past and present related literature, current studies and federal projects have been under investigation by the project coordinators. The previously set timetable listing November for guidelines and January for grants must, of necessity, be revised. Conjointly, our steering committee and advisory board now set priorities for these objectives to be completed as of December, 1971:

- a. A Conceptual Model to which this project will direct itself.
- b. Criteria for evaluation techniques geared toward a developmental functional profile.
- c. Guidelines for proposals.

Advisory Board Members

Mr. Robert Abbott, Waukegan	Dr. Ida Lalor, Evanston
Mrs. Naomi Abrams, Chicago	Dr. Agnes Lattimer, Chicago
Dr. Joseph Braga, Chicago	Dr. Thomas Linton, Chicago
Miss Viva Cornett, Jacksonville	Mrs. Dorothy Livingston, Chicago
Mr. Ivan Garrison, Jacksonville	Dr. Jeanne McCarthy, Schaumburg
Mr. Aaron Gray, Peoria	Mr. Kenneth Randle, Kankakee
Dr. Herbert Grossman, Chicago	Dr. Jerome L. Schulman, Chicago
Dr. Doris Johnson, Evanston	Dr. Paul Weiner, Chicago
Dr. Merle Karnes, Urbana	Dr. Ernest Yahiro, Park Ridge
Dr. Eliezer Krumbein, Chicago	Mrs. Lyn Zimmerman, Springfield

Steering Committee

Mr. David Donald, Director - Handicapped Children
Mr. Kenneth Imhoff, Pupil Personnel Services
Mr. Levi Lathen, Assistant Superintendent - Media Programming
Mr. Chalmer Moore, Curriculum Development
Mrs. Lee Patton, Coordinating Unit, Exceptional Children
Miss Barbara Vogel, Learning Disabilities Supervisor

A working conceptual model has been tentatively accepted to implement the first objective of the project which is stated as follows:

to complete an acceptable set of evaluative instruments which may be used for the identification of potential learning disabilities in children 0-6 years of age.

Using this model, it should be possible to develop a handbook which can be used to screen young children. This screening can be done by any of the various adults who come in contact with a given child. A copy of the model is attached for your consideration.

Any such handbook for screening purposes (not diagnosis) will obviously miss some children who should be identified and make some false positive identifications. Therefore, such a device will need continuous revision.

The handbook will be written on a chronological age outline (front side of model), listing items for each behavioral category (top of model) by six-month levels. At the end of each chapter, the child will be rated (side of model) on a developmental functional profile which would thus indicate his intra-developmental levels.

The framework of this handbook will be developed by the Office of the Superintendent of Public Instruction, using predictability as the chief criterion. The project staff will select predictive indicators which, in turn, will be submitted for review and modification by experts in the field.

Following this development of a handbook, the Office of the Superintendent of Public Instruction will entertain proposals for field testing. It has been decided at this time to concentrate on the 3-5-year-age level. Guidelines for these proposals will be distributed during January, 1972, and funds will be dispersed during February, 1972. This will be a 5-month grant as opposed to the typical full year grant.

It is assumed that this field testing will not require additional staff. Rather, the handbook will be used in an existing facility which deals with young children; such as public health, day care, special education et cetera.

To further help us in preparing this handbook, we ask that anyone currently involved in research, relevant to predictive indicators for screening 3-5-year-old youngsters, contact Mrs. Carol Mardell or Mrs. Dot Goldenberg. Channel written replies to 188 W. Randolph, Room 1400, Chicago, Ill. 60601.

APPENDIX L

MEMORANDUM

December 30, 1971

TO: DIRECTORS OF SPECIAL EDUCATION
TITLE VI, ESEA PROJECT COORDINATORS

FROM: Carol D. Mardell, Education Specialist
Dorothea S. Goldenberg, Educational Specialist
Handicapped Children Section

SUBJECT: Field Testing of DIAL

The Office of the Superintendent of Public Instruction for the State of Illinois has made a firm commitment to early childhood education for handicapped children. As a result, we are currently involved in a research project for screening and identifying prekindergarten children down to age three who may have potential learning problems.

We have compiled a set of developmental indicators for the assessment of learning (DIAL) for children between three and six years of age. We wish to field test these indicators throughout the State of Illinois. It is most appropriate that we utilize facilities equipped to follow Title VI guidelines.

It is our intent that this project provide a service for implementation of the current legislation. The Office of the Superintendent of Public Instruction intends to inform the general public of the need for mass screening of young children. It is extremely desirable that the screening should not have a negative stigma. The Office of the Superintendent of Public Instruction is prepared to provide inservice training on screening techniques for all personnel involved. A total of \$50,000 is available for the field testing. Each current Title VI, ESEA project is eligible to participate. You are invited to submit an application for participation. The following information should be included in the application.

1. A complete description of your physical facilities, including location, size of gymnasium or multipurpose room and equipment, including all visual and audiometric instruments!
2. Resumes or vitae for each staff member who will render services in the project will be required at a later date. The staff may have diversified skills and training.
3. A detailed description of the population characteristics and estimates of the number of three, four, and five year olds available.
4. A description of available diagnostic services for necessary follow-up.
5. A description of current educational programs for prekindergarten children.
6. A description of planned educational programs for prekindergarten children.

Project coordinators are encouraged to involve other agencies within the community which have direct contact with young children. Cooperation between agencies, parents, and other individuals is being stressed in order to reach as many children as possible.

All applications for participation must be received by the Superintendent of Public Instruction on or before January 18, 1972, for consideration. Notification of participants has been tentatively set for February 7, 1972.

The Superintendent of Public Instruction may request additional information deemed appropriate to further describe any item.

The Office of the Superintendent of Public Instruction reserves the right to revise or modify applications or portions thereof.

All applications will be reviewed by the Office of the Superintendent of Public Instruction and the Advisory Board of the project.

Applications should be mailed to:

Mrs. Carol D. Mardell
Educational Specialist
Handicapped Section
Office of the Superintendent of Public Instruction
188 W. Randolph, Room 1400
Chicago, Ill. 60601

APPENDIX M
EVALUATION OF IN SERVICE
FOR DIAL

Directions:

You have just participated in a training experience. As part of the assessment design for our project, we are seeking your reactions and observations. Please be frank and direct in your short statements. Thank you for your splendid cooperation.

I. Have you ever attended workshops like this before?

Yes ☐ No ☐

II. List 3 specific objectives you had for this in-service meeting.

III. What activities proved helpful to these objectives?

IV. Which activity was least helpful? Why?

V. Should this be deleted from future in-service meetings?

VI. Did this experience increase/decrease your confidence in participation of DIAL?

APPENDIX N



State of Illinois
Office of the Superintendent of Public Instruction
188 W. Randolph
Chicago, Illinois 60601

Michael J. Bakalis
Superintendent

CRITERIA FOR SITE EVALUATION

1. Random check of scoresheets to verify proper scoring.
2. Observation of Operators to determine:
 - a) screening time per station
 - b) standardization of presentation
 - c) difficulties of setup and mobility of team
3. Receive list of team members to check vitae folders.
4. Notify site that all material will be returned to OSPI.
5. Determine number of children tested at time of visit and check schedule for time and testing flow.
6. Notify Gross Motor to use all measurement of inches.
7. Communicate with Speech area to determine notation procedures and interpretation.
8. Inform coordinator to maintain a running line item budget.
9. Check to see that birthdate and today's date are noted.
10. Each of the six operators will evaluate every aspect of her station and make recommendations for change which will be written and returned to OSPI at the conclusion of the project.

APPENDIX O



State of Illinois
Office of the Superintendent of Public Instruction
188 W. Randolph
Chicago, Illinois 60601

Michael J. Bakalis
Superintendent

MEMORANDUM

May 31, 1972

TO: DIAL Field Testing Sites

FROM: Carol Mardell, Educational Specialist
Dorothea Goldenberg, Educational Specialist

SUBJECT: DIAL Field Testing Completion

Our onsite evaluation of your DIAL team and coordinators reflects your continued professional excellence. Suggestions presented to team or site coordinators were initiated for research control and by no means reflected personal commentary.

When your site has concluded testing, please check with OSPI - DIAL Chicago office to verify numbers received and acceptability for population and number requirements. If numbers are missing our office will alert team coordinators for replacement possibilities. Both site and office should agree on numbers sent and numbers received.

Please forward complete DIAL contents to our office in Springfield. Direct the cylinder to Bill Lohman at IMC Center, 1020 S. Spring St., Springfield, Ill. 62706. The IMC will house the total kit until printing and distribution is completed.

One final request; it is imperative that we ask each team operator to evaluate her area item by item. We expect to make adjustments within testing procedures according to recommendations of DIAL team members. Inclusion of individual analysis of complete DIAL operation would be necessary for team coordinators.

Thank you for your time, professional staff courtesy, and most of all patience.

APPENDIX P

NORTHWESTERN UNIVERSITY

PARENT QUESTIONNAIRE FOR PRESCHOOL CHILDREN

Name _____

Age _____ yrs. _____ mo.

Boy _____ Girl _____

Number of older brothers and sisters _____

Number of younger brothers and sisters _____

READ EACH QUESTION CAREFULLY. CIRCLE THE NUMBER FOR THE STATEMENT THAT BEST DESCRIBES YOUR CHILD.

1. How well does your child ride a tricycle?

1	2	3	4	5
poor	fair	good	very well	excellent

2. How does your child take care of his toys?

1	2	3	4	5
willfully destroys toys	carelessly destroys toys	takes toys apart; unable to put back together	very careful	extremely careful; upset if one gets broken

3. Describe your child's ability to remember past events.

1	2	3	4	5
sees to forget things very quickly	remembers only recent events	recalls some things, at least in part, for a long time	recalls certain events in careful detail	remembers many events, often insignificant, in careful detail

LDC:0623-2

APPENDIX P (Cont.)

4. Describe in general how your child gets around the house or yard.

1	2	3	4	5
very hesitant in movement; cautious walking; clumsy	sometimes bumps into objects or falls	can manipulate body around objects; runs and walks	sure of body movement; controlled running and walking	easy, rhythmic movement; maneuvers corners; adapts to environment

5. How does your child count?

1	2	3	4	5
names only a few numbers in random order	counts to 10 but misses or skips some numbers; usually out of order	counts by 1's to 10; always in correct order	counts past 10 to 20 but gets confused with numbers past 10	counts to 20 correct order; never misses

6. How well does your child adjust to new activities and situations?

1	2	3	4	5
fearful; withdrawn	shy; very cautious	shy at first; takes a little time to get involved	seems eager to get involved right away	very adaptable; hold outgoing

7. How does your child respond to strangers?

1	2	3	4	5
very fearful	cautious	timid or shy at first	usually friendly	very outgoing

APPENDIX P (Cont.)

8. How does your child get along with other children?

1	2	3	4	5
fights, cries, is selfish	boss; leader, wants things his own way	shy at first, then plays well	depends on age or sex of child	communicates very well

9. How well can your child take care of his toilet needs?

1	2	3	4	5
not trained yet	wets occasionally at night	average	needs some assistance	independent

10. Which hand does your child use for eating, drawing or picking up toys?

right _____ left _____ both _____

11. How well does your child pronounce his words?

1	2	3	4	5
I hardly understand him at all	I understand when he speaks slowly; he has trouble with many sounds	I can always understand him, though he has trouble with a few sounds	he pronounces most of his words correctly	pronunciation very good - everyone understands him easily

12. When does your child come to you for help?

1	2	3	4	5
very often, when tired, hurt or angry	occasionally when tired, hurt or angry	frequently when he can't do something or he is confused	occasionally when he can't do something or he is confused	occasionally, when he wants to learn

APPENDIX P (Cont.)

13. Describe anything particularly noticeable about the way your child walks.

1	2	3	4	5
awkward, unstable; falls frequently	toes in (pigeon- toed)	coordinated; nothing unusual	well-balanced; good posture	rhythmic, uniform body movement

14. Does your child use sentences?

1	2	3	4	5
not yet	usually 2 word combinations - "me go", etc.	usually 3 or 4 word sentences - "We go home", etc.	mostly 4 word sentences; can easily carry on conversations.	uses 5 words and more; can tell long stories

15. What parts of the body does your child know?

head _____	tongue _____	knee _____	hand _____
eyes _____	lips _____	ankle _____	finger _____
nose _____	eyebrows _____	foot _____	shoulder _____
ears _____	cheeks _____	toes _____	elbow _____
mouth _____	throat _____	hip _____	neck _____
eye lashes _____	leg _____	arm _____	stomach _____
			buttocks _____

16. Indicate the kinds of pretend and make-believe games your child generally plays.

Monsters, ghosts
Animals
Storybook characters, e.g. kings, superman, princess
Make-believe friend
Real life people, e.g. fireman, athletes, nurse
Reenacts real life situations, e.g. house, school

APPENDIX P (Cont.)

17. Describe your child's vocabulary

1	2	3	4	5
uses very few words	500 or less words; often doesn't remember words he needs	almost 1000 words; usually has words he needs	1500-2000 words; vocabulary developing quickly	approximately 2000 words or more; asks meanings of new words

18. How well does your child walk on his tip toes

1	2	3	4	5
never observed walking on tip toes	wobbly; awkward	fairly well	good	coordinated; stable; very well

19. Indicate the kinds of things your child generally plays with.

books, puzzles, blocks _____
 paper, pencils, crayons _____
 scissors, paste, glue _____
 trucks, cars, trains _____
 tinkertoys, Lincoln Logs, take-apart toys _____
 dolls, dishes, dress-up _____
 ball, jump rope, bike, swing _____
 mud, water, sand, play dough _____
 table games, e.g. Candy Land _____

20. How long would your child stay with an activity such as puzzles, blocks, picture books?

1	2	3	4	5
less than 5 minutes	about 5 to 10 minutes	at least 15 minutes	at least 1/2 hour	as long as 1 hour

APPENDIX P (Cont.)

21. What forms of punishment does your child respond to?

1	2	3	4	5
spankings	denial of favorite things	isolation - sitting in chair or going to bed	scolding or raised voice	talking things over

22. How well can your child find things that you name?

1	2	3	4	5
rarely understands what I mean	can point to a few objects when I name them	finds almost anything I name in the house	will ask when words are unfamiliar	seems to understand all the words I use

23. How well can your child dress and undress himself?

1	2	3	4	5
cannot dress or undress himself	poorly	fair, but with great deal of assistance	completely except needs help with tying, buttoning, etc.	needs no assistance

24. How does your child act when you have to leave him?

1	2	3	4	5
reluctant, cries most of the time	quite reluctant	fine, with some reassurance	fine, except for occasional circumstances	adjusts well

APPENDIX P (Cont.)

25. Described how your child gets up and down stairs.

1	2	3	4	5
no opportunity to use stairs	cautiously; needs great deal of help	goes up and down stairs 2 feet per tread	goes up stairs 1 foot per tread; down, 2 feet per tread; self-supported by rail	goes both up and down stairs 1 foot per tread

26. When does your child use gestures?

1	2	3	4	5
never	used gestures when younger, but not now	uses gestures when excited or when trying to explain something	uses gestures frequently to let me know his needs	always uses gestures; uses very few words

27. How easy is your child to manage in the home?

1	2	3	4	5
very difficult	often stubborn or quiet	needs much attention and time	easy except for different situations (strangers or siblings around)	very easy

28. What shapes does your child know?

circle	square	triangle	rectangle	oval
Others (specify)				

APPENDIX P (Cont.)

29. When does your child look for your affection?

1	2	3	4	5
constantly, no specific reason necessary	often when tired or hurt	frequently; when others are receiving affection	occasionally when proud of something	seldom; quite independent

30. What colors can your child name?

1	2	3	4	5
none	a few of the basic colors, e.g. red, blue, etc.	all of the basic colors; red, yellow, blue, green, orange, purple, brown, black	all of the basic colors plus a few others, e.g., pink, white, etc.	all of the basic colors plus others; also names shades or tints, e.g. light-blue, beige, etc.

31. How does your child tell you about things he has done?

1	2	3	4	5
doesn't use words yet to explain	will try to explain only when asked	will explain occasionally; well enough that I can understand	generally tells about things clearly	tells about everything that he does; describes events in detail

32. What does your child do when he plays alone?

1	2	3	4	5
never plays alone	has one or two favorite toys he always plays with	plays with a number of different kinds of toys	plays with different toys; also enjoys looking at picture books and coloring	plays with a wide variety of toys and games, including moving objects and books; plays pretend games; reenacts real life situations

APPENDIX P (Cont.)

33. How well can your child tell the different between colors?

1	2	3	4	5
none consistently	confuses similar colors, e.g. red-orange	can tell difference between all the basic colors; can associate objects with colors	all basic colors and some shades of same color	all colors; can also tell the difference between subtle shades and tints of same color

34. How does your child recognize your feelings?

1	2	3	4	5
doesn't seem to understand yet	understands when I explain feelings to him	can tell when I'm happy, sad from sound of my voice and/or look on my face	recognizes most feelings	responds appropriately to all my feelings and expresses his feelings as well

35. What kinds of things does your child draw?

1	2	3	4	5
not interested in drawing yet	scribbling	definite shapes or objects	detailed drawings	drawings that depict a story

36. What things upset your child?

1	2	3	4	5
easily upset by not getting own way or disapproval by others	often - not center of attention or arguing	frequent, unsuccessful attempts when trying to do something	occasional strange situations, animals or people	not easily upset

APPENDIX P (Cont.)

37. When does your child look for your attention?

1	2	3	4	5
when tired or hurt, very often	often when jealous of attention to others	frequently when bored, nothing to do	occasionally when pleased with some accomplishment	independent, seeks little attention

38. Does your child follow directions?

1	2	3	4	5
rarely; only if very interested	will follow one simple command	follows 2 or 3 simple directions in a row	will follow 4 or 5 simple directions	remembers long sets of instructions and will carry them out

Have you any further comments regarding this questionnaire or your child?

APPENDIX Q

PROJECT DIAL

Evaluation of Project Objectives: Internal

The objectives have been met to date in as much as has been possible. However, due to circumstances beyond the control of project staff, the time line has had to be extended.

- Objective 1: To compile an acceptable set of evaluative instruments which may be used for the identification of potential learning disabilities in children 0-6 years of age. This objective had to be changed as there were not sufficient quality instruments available. The focus then changed to develop an acceptable instrument. The age range had to be cut down to 3 and 4-year olds as this was the immediate need in the State of Illinois.
- Objective 2: To develop recommendations for implementation and utilization of this final battery. The in-service workshops and manual have been the two mediums that deal with this. However, the time line again has been extended.
- Objective 3: To develop recommendations for intervention, amelioration, preventive, and/or remedial programs for preschool children with learning disabilities.
- Objective 4: To recommend areas in learning disabilities/early childhood education in need of further research.

Because of the necessity to extend the time line, Objectives 3 and 4 have only begun to be handled. They are certain to be met in the very near future.

PROJECT DIAL

Internal Evaluation of Working Draft of DIAL Manual

The manual should be written in such a way as to allow any paraprofessional or volunteer to read it and then be able to carry out the operation without having to go through an in-service training workshop.

In relationship to the working model of the manual, the behavioral observations have to be further defined and described (behaviorally) if there is to be inter rater reliability.

Test must have standards with no deviations: i.e., all kids take off shoes; i.e., what happens if child cries at picture taking time, do you or don't you take picture?

Too much language used in the test administration.

Too many variables present in the tasks; i.e., concepts vs. ability to perform tasks.

Manual must have explicitly stated criteria to determine pass or fail scoring.

Should throw out anything that makes an assumption.

Head size item could be a racist type problem.

Drawings must not be detailed to the point of having too many variables; i.e., color and background - "Don't add additional concepts."

The manual should have the detail necessary to allow the testor to react to all the different responses they might get.

APPENDIX R

STATE OF ILLINOIS
OFFICE OF THE SUPERINTENDENT OF PUBLIC INSTRUCTION
MICHAEL J. BAKALIS, SUPERINTENDENT

July 7, 1972

MEMORANDUM

TO: Independent Evaluators

FROM: Carol Mardell & Dorothea Goldenberg

SUBJECT: Evaluation of Learning Disabilities
Early Childhood Research Project: First Year

We would like to have three independent evaluations of our project which would look critically at what we have done during our first year of operation, taking into consideration our objectives and criteria, and indicate the following:

1. How well have we met our objectives?
2. Which methods and procedures for reaching goals should be continued? discontinued? altered?
3. How can we improve our internal organization?
4. How can we improve DIAL?
5. What objectives should be most important for next year and how can they be reached?

Please respond by August 1 if you are interested in evaluating this project and indicate what the cost would be for such an evaluation. Please respond directly to:

Dr. Carol Mardell
Director, Project DIAL
O. S. P. I.
188 W. Randolph, Suite 1400
Chicago, Illinois 60601
PHONE: 312-793-3854

A copy of the Project description is enclosed to enable you to make this decision more easily.

APPENDIX S

Dr. Nicholas Anastasiow
Director, Institute for Child Study
Indiana University
Bloomington, Indiana

Dr. Donald Ary
Northern Illinois University
Elementary Education
423 Graham Hall
DeKalb, Illinois 60115

Dr. Donald Beggs
Dept. of Guidance & Educational
Psychology
Southern Illinois University
Carbondale, Illinois

Dr. Bettye Caldwell
Director, Center for Early Development
and Education
College of Education
University of Arkansas
814 Sherman Street
Little Rock, Arkansas 72202

Dr. James Chalfant
Dept. of Special Education
University of Arizona
Tucson, Arizona 85721

Dr. Alan Cohen
Associate Professor of Education
Yeshiva University
New York, New York 10021

Dr. Katrina DeHirsch
46 E. 82nd St.
New York, New York 10021

Dr. Jasper Harvey
Chairman
Dept. of Special Education
University of Texas
Austin, Texas 78712

Dr. Schuyler W. Huck
College of Education
University of Tennessee
Knoxville, Kentucky 37916

Dr. Jeannette Jansky
120 E. 89th. St.
New York, New York 10021

Dr. Lillian Katz
E R I C
805 W. Pennsylvania Avenue
Urbana, Illinois 61801

Dr. Terry Lawrence
Southern Connecticut State College
501 Crescent Street
New Haven, Connecticut 06515

Dr. William Meyer
Professor of Psychology
Department of Psychology
Hunington Hall
Syracuse University
Syracuse, New York 13214

Dr. Don Stedman
Chairman
Division of Human Development
Director of Training
and Programs Development
Frank Port Graham
Child Development
Highway 54 Bypass
Chapel Hill, North Carolina 27514

APPENDIX T

CRITERIA FOR SELECTION OF EVALUATORS:

1. Individual is a respected leader in early childhood, special education, and/or psychology and test construction.
2. Individual has experience as evaluator.
3. Individual is available during stipulated period.
4. Cost of individual complies with project budget.

APPENDIX U

VITA

Donald Eugene Ary

PERSONAL DATA

Born: July 2, 1930, Jamestown, Ohio

Marital Status: Married; three children born 1959, 1961, 1963

Present Address: 526 Russell Road, De Kalb, Illinois 60115

EDUCATION

1952: B.S. in Education, Wilmington College, Wilmington, Ohio
Major: Social Studies
Elementary Education

1953: M.S. in Education, Syracuse University, Syracuse, New York
Major: Elementary School Administration

1966: Ph. D., University of Iowa, Iowa City, Iowa
Major: Educational Psychology
Minors: Research, Measurement, Statistics
Special Education (emotionally disturbed)

ACADEMIC AND ADMINISTRATIVE EXPERIENCE

1950-1951: Elementary teacher, Newton Township School, Pleasant Hill, Ohio

1953: Editor-in-Chief, Jamestown Journal, Jamestown, Ohio

1955-1957: Elementary teacher, Beaver creek Township School, Xenia, Ohio

1957-1964: Elementary teacher, Dependent Schools U.S.A.F., Europe

1964-1966: Research assistant, University of Iowa, Iowa City, Iowa

1966-1969: Assistant Professor, Department of Educational Psychology, Indiana University, Bloomington, Indiana

1969-1972: Associate Professor, Department of Administration and Services, Northern Illinois University, DeKalb, Illinois

1972-present: Full Professor, Department of Administration and Services, Northern Illinois University, DeKalb, Illinois

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Educational Research Association
Phi Delta Kappa (professional graduate education fraternity)

PUBLICATIONS, EXHIBITIONS OR PERFORMANCES

Books

1. Introduction to Research in Education, Holt, Rinehart, Winston, 1972, (together with Lucy Jacobs of Indiana University and Asghar Razavieh of Pahlavi University, Iran.)
2. Instructors manual to accompany above
3. Recommendations for Analyzing Data from the 1970 Pupil-Centered Instruments, document co-authored with Robert Rosemier under contract with Bureau of Elementary and Secondary Education U.S.O.E.

ARTICLES IN REFEREED JOURNALS

1. "PNG, HSR, and Licensure Examination Results" with Sister M. DeLourdes in Nursing Outlook, November 1967.
2. "EXODUS: The Pathway to Happiness in Research" with Dr. Richard H. Coop in The Worm Runner's Digest, Vol. X, No. 1, 1968.
3. "A Scheme for Optimizing Computer Use in Flanders Interaction Data Collection and Analysis" with Dr. Edward Gotts and John Shaver in Classroom Interaction Newsletter, Vol. 4, No. 1 December 1968.
4. "Extended Computer Use in Compiling a Flanders-Amidon Interaction Analysis Matrix" with Dr. Edward Gotts and John Shaver in Educational and Psychological Measurement, March 1969.
5. "Alice Over Sigma" School Research Information Quarterly, Vol. III, No. 1 (Spring 1970)
6. "Book of Correlations" The Worm Runner's Digest, Vol. XII, No. 1 (October 1970).
7. "Design Creed" School Research Information Quarterly, Vol. III, No. 2 (Winter 1970).
8. "A Researchers Xmas Carol" The Worm Runner's Digest, Vol. XII, No. 2 (Winter 1970-71).
9. "Relative Rankings of the Values of Fraternity Membership as Perceived by Members" with Thomas Weakly in Midwest Education Review, Vol. III, No. 4, Summer 1971).
10. "Current Trends in British Secondary Education" Midwest Education Review, Vol. III, No. 4.
11. "Whatever Became of Little Hans?" The Journal of Biological Psychology - Worm runner's Digest, Vol. XIII, No. 1.

MISCELLANEOUS INFORMATION:

Consultantships:

1. Consultant to Bureau of Elementary and Secondary Education, U.S. Office of Education. (This is in addition to preparation of the document described under books). 1969-1970.
2. Consultant to DeKalb Community Unit School in connection with state-sponsored project "Individualized Instruction and Independent Learning for Gifted Students in High School Humanities." 1971

INDEPENDENT EVALUATION

Project DIAL
OSPI

September, 1972

Donald Ary, Ph.D.
Professor
College of Education
Northern Illinois University
DeKalb, Illinois
60115

I. GENERAL

This project has been remarkably productive. Much more has been accomplished than one would expect given the limits of time and money. The professional staff seem very competent and very dedicated to the project and to its efficient completion. One gets the impression that they have put more effort and unpaid overtime into this project than one typically finds.

II. OBJECTIVES

The objectives of this project represent an important need in the field of education. They have a well-reasoned philosophical base. They are realistic objectives. However, the professional staff were not realistic in originally projecting the completion of all four of the original objectives within the time and money restrictions of the project. They were wise to concentrate present efforts on the first two objectives and leave the last two for the future.

The objectives of the DIAL project seem especially timely. With the increasing tendency for schools to be asked to take more responsibility for three-to five-year olds a constructive project which deals with these ages should have high priority. The notion that schools should identify early those children who have special problems and attempt to enable them to cope with regular classroom environments is an idea whose time has come.

Since these concerns are nationwide rather than limited to Illinois, I would urge the staff to seek federal support for the project. The National Institute for Mental Health and the U. S. Office of Education should be especially interested in such a project.

III. PLANNING

In general the planning of the project was well thought out and well done. Much potential waste and inefficiency was avoided through careful and realistic planning. I am especially impressed by the realistic and well-met time tables. As usual, hindsight reveals some things that should have been done differently in the area of planning.

The advisory board including professionals in various disciplines was established to assist in creating a multidimensional interdisciplinary approach and met as a group on occasion. This way of using experts from various disciplines was not productive. It is difficult for a large group to reach consensus on any matter, especially a multidisciplinary group where each member approaches problems from the viewpoint of his own discipline.

It would have been better to establish a panel of consultants from various disciplines and work with them one at a time. It is important to have various disciplines represented in this project and the use of consultants is probably the most efficient way to accomplish this. I hope in the future experts from various disciplines will be used in this way.

IV. ORGANIZATION AND PERSONNEL

One is reluctant to suggest organizational changes in a project that has been as productive as this one has. However, as the project moves into a new phase, certain changes should be productive. As previously noted, a roster of consultants would probably have been more useful than an advisory board in planning the early stages of this project. I would urge the staff to make greater use of consultants in the future.

This project needs additional professional personnel in order to meet its objectives within a reasonable time. The following professional personnel are suggested.

1. An expert in early childhood and special education.

The first function of this person would be to assist the present staff in the development of recommendations for implementation and utilization of the final battery. The second function would be to assist in the development of

recommendations for preventive and/or remedial programs for children who have been identified as having potential learning disabilities. This person would be needed for the duration of the project.

2. An expert in the construction, field testing, analysis and marketing of tests.

This person could carefully scrutinize the present instrument to see if the present procedures could be improved. There may be cases where the instructions could be made clearer, where less time consuming and less costly procedures could accomplish the same things accomplished by the present procedures, etc. A good test constructor should be able to assist the present staff in producing an efficient and easily administered test. He could assist in rigorously assessing the reliability, validity, and usefulness of the final instrument.

This would be a temporary position terminating at the completion of the final version of the instrument. If no promising candidates are available on a short-term, full-time basis, it might be advisable to hire a consultant in this field or to contract for the necessary services.

3. A systems expert.

The project needs a systems expert to plan the efficient processing and analysis of the data generated by the project. As in the case of the measurement position, this might be a short term, full-time position, a consultant or be contracted for.

4. A statistics consultant.

The present statistics consultant should be retained. He should work with the systems expert in planning the analysis of data as well as continue his present services.

5. A consultant who has expertise in both learning disabilities and measurement.

This person should assist in producing a final instrument which fits both the criteria for good measurement and the needs of special education. I would suggest Dr. Eloise Blankenship (vita enclosed) as a candidate for this position.

6. Other consultants and contractual services as needed.

7. Full-time secretarial help.

At present the professional staff sometimes do their own typing. This is an inefficient use of manpower. Adequate secretarial services should be available.

NOTE: The present professional staff show a great dedication to this project. They have worked tirelessly and have even spent money from their own pockets to expedite the project. This dedication is commendable and is largely responsible for the success of the project thus far. I would suggest, though, that the staff should strive to be a little more detached and objective.

V. IMPLEMENTATION

a. Background

The DIAL staff have done an excellent job of gathering and organizing related literature on their topic. They have employed contemporary efficient methods for doing this such as the ERIC system. They seem well aware of what other projects in this field are doing. They have thoroughly investigated existing instruments. Therefore, I am convinced that they were correct in concentrating their efforts toward creating and field testing their own screening instrument. Some elements of the instrument are similar to elements that have proven successful in other tests. Some are entirely new including some that attempt to assess skills not previously measured. The construction of the present instrument has been a creative endeavor and promises to be a worthwhile contribution to the field.

b. Establishment of Criteria

The establishment of criteria for the evaluation of the final battery is probably the Achilles heel of this whole project. The prediction of learning disabilities is hampered by the present lack of a good operational definition of learning disabilities.

A widely held definition of a learning disabled child is one whose achievement age is two years behind his mental age. Similar definitions employ an achievement age/mental age ratio. These definitions, since they employ different scores, are inherently less reliable than the achievement and mental measures they employ. The low reliability of this criterion will be a serious problem in assessing the validity of the screening battery of this project.

Even less reliable are the procedures used by schools to assign children to learning disabilities classes. In making such assignments, the schools probably use such variables as (1) are children behavior problems in the classroom, (2) are they apparently immature or somehow different from their peers, (3) does their speech seem less developed than their peers, (4) are they poor in motor coordination and/or attentive behavior, and (5) scores on ITPA, Vineland, Frostig, Goodenough, and Kephart tests.

If the ultimate criterion for the effectiveness of the DIAL screening instrument is its ability to predict placement of children by the schools. The project personnel must face the reality that the apparent effectiveness of a predictor is inherently limited by the restricted reliability of the criterion.

This is not to say that the DIAL project is not worthwhile. We hope that the results of this project will be to assist schools in the appropriate placement of those who need help in learning disabilities classes.

I feel the project personnel have not fully considered the impact the instability of the criterion may eventually have on this project. They expect the DIAL scores to be highly correlated with subsequent placement or nonplacement in learning disabilities classes. I suggest it would be more realistic to anticipate a low, though still useful, correlation.

The project staff should begin a systematic investigation of the way in which schools determine who is placed in learning disabilities classes. Such an investigation should identify those variables which the schools consider in such placements and how they weight these variables. Then it could be determined which of these variables are related to DIAL scores and the extent of each relationship.

A more sweeping suggestion the staff may wish to consider is this, analyze what skills are needed to succeed in school, then see to what extent DIAL scores are related to these skills. Since in general a learning disabled child is one whom the school decides is not doing as well as he should in school, an analysis of what is needed to do well in school might be useful in the DIAL project. For example, the DIAL instrument appears to be extensively measuring vocabulary and the ability to follow directions. Perhaps these are vital skills in school settings. The major impact of the DIAL instrument may be its usefulness in predicting school success in general rather than its ability to identify potential learning disabled children, per se. If specific skills needed to succeed in school can be identified and measured at an early age by DIAL, specific remedial programs can be designed to teach these skills to those who need them. This would be a major accomplishment indeed.

c. Other Potential Uses for the Instrument

I hope the project staff will be alert to possible use of the instrument other than those originally planned. It may be that the DIAL instrument is more highly related to WPPSI and Binet intelligence test scores than it is to school achievement. If this be the case, the outcome would be a relatively inexpensive instrument that could give schools practically the same information they presently obtain from expensive individually administered intelligence tests.

The DIAL instrument may be effective for early identification of mentally retarded children. That possibility should also be investigated.

d. Reliability of the DIAL Instrument

A major shortcoming of the project thus far is that no attempt has been made to assess the interjudge agreement or the

reliability of the DIAL instrument. It would have been relatively easy to reexamine a selected group of children to establish test-retest reliability estimates for each of the subtests. This could have led to the elimination of any subtests with low reliability and the possible substitution of similar, more reliable subtests. Interjudge agreement could have been assessed by having several examiners score the same performance.

Reliability studies can, and must, be done in the next stage of the project. It would have been more efficient to begin such studies earlier.

e. Concurrent Validity of DIAL

An informal study was made in which experts were asked to identify which children were potential "high risks." Their conclusions based on extensive and expensive procedures were very similar to the conclusions reached through the DIAL procedure. This argues well for the potential usefulness of the DIAL procedure. A systematic concurrent validity study of this nature should be conducted on the final version of the DIAL instrument. Knowing how highly DIAL results correlate with other assessments of the same traits is essential to this project.

It is also important to know how DIAL scores correlate with other measures available for young children, WPPSI and Binet IQ scores and Vineland social maturity scores, for instance. In order to advise schools on how to use DIAL scores, the staff should have a reasonably complete picture of how these scores are related to other measures.

f. Predictive Validity of DIAL

Basically, the success of this project will be judged by how well the DIAL scores predict the future performance of children. The need for more clearly defined definitions of the criteria has been pointed out earlier. I would urge the staff to employ multiple criteria for investigating the predictive validity of the DIAL instrument. DIAL scores should be correlated with subsequent placement or nonplacement in learning disabilities classes and with the various measures schools use for making such decisions. Of course, only those cases where DIAL scores have not been used in making such decisions can be sued here. DIAL scores should also be correlated with subsequent achievement test scores, teacher ratings, and differences between IQ and achievement scores. The correlation between DIAL scores and subsequent IQ-achievement differences seems especially important since these difference scores are so often used in defining the learning disabled.

We need to know what subsequent variables correlate with DIAL scores, not only those variables of direct concern but also those of indirect interest.

g. Field Testing

Appropriate procedures for selecting a sample representative of the population of Illinois were used. The field testing at the various sites seems to have been done quite efficiently.

The sample was larger than really necessary. Similar information could have been obtained with a sample one fourth the size of the sample used.

By selecting representatives of various subgroups in the population, it will be possible to determine what cultural biases are present in the test.

It is commendable that the staff attempted to create an instrument without cultural bias. Although it is unlikely that the final instrument will be completely free of such bias, it may well have less bias than most such instruments. Many instruments in the field have never been assessed in terms of cultural bias.

h. Test Administration

One of the goals of this project was to produce an instrument that would have the advantages of an individually administered test yet remain relatively inexpensive. This goal has been realized with the present instrument. This revised instrument will undoubtedly be even less expensive.

The use of testing stations through which children rotate is a splendid innovation which has led to a considerable reduction of costs. The use of paraprofessionals is another excellent cost-effective procedure. I am impressed with the efficiency of the testing procedure.

i. Statistical Analysis

The data from the field testing is presently being analyzed. In general, the right questions are being asked in the analysis.

The following are suggested ways of using the statistical information from the field test. I realize most of these are already planned, but for convenience, I am presenting the complete list as I would propose it.

1. Identify any items that do not discriminate, i.e., any items practically all subjects get right or wrong. Eliminate these items from the instrument.
2. Identify which items are developmental, i.e., which correlate with chronological age. Items which do not correlate well with chronological age should be dropped unless there are compelling reasons to believe they will none the less be highly related to the criterion.
3. Identify which items are highly correlated with each other. If several items are apparently measuring the same skill, some of them can be dropped from the final instrument unless it is decided to deliberately weight that skill heavily by including many items measuring the same thing.
4. Conduct a factor analysis of the items. This would reveal a parsimonious aggregation of factors underlying the items. The next step would be to label the factors according to the underlying skills they represent. Then scoring instructions can be altered to yield subscores in each factor. These subtests should replace the four subtests in the present test.
5. Investigate the differences between males and females, rural and urban, races, and socioeconomic class. This should reveal which items have the most cultural bias.

VI. OTHER RECOMMENDATIONS

The following are recommendations not included in previous sections.

a. Creation of a Refined Instrument

1. Following the analysis of the data a refined instrument can be assembled. Some items will have been identified as candidates for deletion. Other items will be seen to be redundant. A quick field test of the reliability of the redundant items should then be made. The more reliable items should be retained, the less reliable items dropped.
2. Next, the refined test should be assembled and directions developed for administering and scoring it. The refined test will be briefer and more efficient than the present test. Some items may need to be altered somewhat and some new items may be needed. Some subtests may need to be expanded or contracted in order to obtain appropriate weightings. The present system of administering the instrument by station could be maintained but the scoring sheet should be rearranged to allow for convenient summing of items by factor.

3. A test-retest reliability study should be made on the new instrument. An investigation of the effects of different orders of presentation of items should be made.
4. A field test of the revised instrument should be made. The sample of subjects should be as representative but not as large as that of the original field test.
5. Norms for each age should be developed for the new instrument. A sample proportionally representing the subgroups within Illinois should be used. I would urge that norms be established for each month rather than for any longer period.
6. A concurrent validity study similar to the one done with the present test should be conducted.
7. Predictive studies, as recommended, should be conducted.

b. Dissemination of the DIAL instrument

One gets the general impression that the school personnel who participated in the field testing and other DIAL activities were enthused about the project. This may be partially explained as the enthusiasm the DIAL staff have for their project being communicated to the school personnel. However, I believe this is only a partial explanation. I believe the school personnel feel a need for a screening device for young children. I think they perceive the DIAL instrument as being an appropriate method for the task. In other words, it looks right to them.

Therefore, the final DIAL instrument will probably find wide acceptance in the schools. Actually, a problem may arise in that the instrument may look so good that the schools will expect more from it than it can actually produce. Appropriate cautions should be incorporated into the examiners manual.

The staff should investigate methods for disseminating DIAL beyond Illinois. The use of a commercial publisher would probably be the best procedure for this.

Of more immediate concern is the need for establishing methods for working with preschool institutions within Illinois. For those children not enrolled in any preschool program an approach similar to that used by organizations carrying out speech and hearing screening might be appropriate.

c. Evaluation

I recommend the employment of independent evaluators at intervals no longer than six months apart, preferably at the beginning of each new phase of the project. Such evaluations could greatly assist in identifying what has or has not been accomplished and what needs to be done next.

The present three independent evaluators are all largely concerned with measurement and research design. The next team of evaluators should include at least one expert in special education.

d. Developing Recommendations for Preventive and/or Remedial Programs for Those Preschool Children Identified as Having Learning Disabilities

As the development of the screening device proceeds, the staff can direct their attention to developing recommendations for programs for preschool learning disabled children. They should also develop plans for testing the effectiveness of such programs through well-controlled experimental studies.

e. Suggested Budget

Professional Staff	90,000.00
Nonprofessional Staff	10,000.00
Consultants	10,000.00
Contracted Services	6,000.00
Printing and Dissemination	13,000.00
Telephone Communications	2,000.00
Staff Travel	2,000.00
Evaluation (contracted)	6,000.00
Field Testing and Reliability and Validity Studies of Instruments	60,000.00
Computer Services and Postage and Supplies	3,500.00
Community Services	<u>500.00</u>
TOTAL	\$200,000.00

VITAE

Name: Donald L. Beggs
Address: Department of Guidance and Educational Psychology
College of Education
Southern Illinois University at Carbondale
Carbondale, Illinois 62901

Phone: Office: 618/453-2866 or 618/453-3779
Home: 618/549-1363

Rank: Professor

Birth Date: September 16, 1941

Education: B.S. Ed. Southern Illinois University — 1963
M.S. Ed. Southern Illinois University — 1964
Ph. D. University of Iowa — 1965
(Educational Measurement and Statistics)

Experience: A. Teaching

Teaching Assistant, Southern Illinois University, March 1963-January 1964

Instructor, College of Education, University of Iowa, February 1966-June 1966

Assistant Professor, Department of Guidance and Educational Psychology, Southern Illinois University, September 1966-August 1969

Associate Professor, Department of Guidance and Educational Psychology, Southern Illinois University, September 1969-August 1972

Professor, Department of Guidance and Educational Psychology, Southern Illinois University, September 1972 to present

Course Responsibilities:

Elementary Statistical Methods
Advanced Statistics
Advanced Experimental Design
Experimental Design-Multiple Regression
Non-Parametrics
Classroom Test Construction
Mental Test Theory
Techniques of Scaling

B. Committee and Administrative Responsibilities

Associate Dean, Graduate School, July 1970-September 1971

Chairman, Research Committee of the College of Education

Chairman, Educational Psychology Functional Area Advisory Committee

Chairman, Educational Psychology Area Committee responsible for evaluating Doctoral Competency in Educational Measurement and Statistics

Chairman, Faculty-Student Advisory Committee for University Testing

Chairman, University Committee to Study Limiting Student Enrollment

Vice-Chairman, University Faculty Council

Member, Computer Programming as a Research Tool Committee of the Graduate School

Member Graduate Information Committee of the Graduate School

Member, College of Education Program Committee

Member, Admission and Retention Committee for the Doctoral Functional Area of Educational Psychology

Member, Graduate School Committee responsible for awarding internal research grants to faculty members

Member, Graduate Committee of the College of Education

Member, Academic Program Review Committee of the Graduate School

Member, Department of Guidance and Educational Psychology Advisory Committee

Representative of the Faculty of the College of Education to the University Graduate Council

Representative of the Faculty of the College of Education to the University Faculty Council

C. Research

Field Researcher (Alexander County Dropout Study) May 1964-September 1964

Special Research Assistant (Iowa Testing Programs) September 1964-February 1966, and June 1966-September 1966

Principal investigator on funded (Southern Illinois University) research proposal, "Modifying Children's School Achievement and Behavior through Changing Teacher's Expectancies," June 1967-June 1968

Principal investigator on funded (Southern Illinois University) research proposal, "The Development and Validation of the Pencil Test of Impulse Control," June 1967-June 1968

Principal investigator on funded (Southern Illinois University) research proposal, "The Educationally Disadvantaged Elementary Child," June 1968-June 1969

Principal investigator on funded (Department of Health, Education, and Welfare - Project No.: OEG-0-8-080088) research proposal, "Educationally Disadvantaged Elementary School Child: Anxiety Reduction and Behavioral Changes Through Public Commitment and Counseling," June 1968-June 1969

Principal investigator on funded (Office of the Superintendent of Public Instruction - Illinois) research proposal, "Interpreting Intelligence Test Results to Teachers."

Research (Cont.)

Participant in the National Symposium for Professors of Educational Research sponsored by Phi Delta Kappa, 1967

D. Cooperating Services

Research Consultant, Cairo Adult Vocational School

Consultant for Development of Criterion Instruments, Marion School District, No. 2

Evaluator for "Project Talent," Marion School District

Research Consultant, Central Midwestern Regional Laboratory

Evaluation Consultant, Alton Title III Project

Evaluator, Audio Visual Equipment for the Gifted, Illinois State Department of Public Instruction

Consultant, State of Illinois Guidelines for Evaluation of Title III Projects

Seminar Organizer and Participant in Title III Workshop for stating behavioral objectives

Research Consultant, Pupil Personnel Services, Illinois State Department of Public Instruction

Consultant, American Rehabilitation Counseling Association Research Awards Committee

Workshop Instructor, "The Application of Multiple Linear Regression Techniques to OSPI Research Questions," Illinois State Department of Public Instruction

Seminar Participant in inservice seminar workshop in research procedures for classroom teachers in the Springfield Public Schools

Evaluation Consultant, Cahokia Title III Project

Evaluation Consultant, Title I Project at the University of Connecticut

Outside Project Evaluator, Title III, E.S.E.A. State of Minnesota

**Funded
Research
and Projects:**

"The Development and Validation of the Pencil Test of Impulse Control," 1967-68, funded by Southern Illinois University

"Modifying Children's School Achievement and Behavior Through Changing Teacher's Expectancies," 1967-68, funded by Southern Illinois University

"Interpreting Intelligence Test Results to Teachers," 1968-69, funded by the State of Illinois, Office of the Superintendent of Public Instruction, Division of Pupil Personnel Services, Springfield, Illinois

"The Educationally Disadvantaged Elementary School Child: Anxiety Reduction and Behavioral Change Through Public Commitment and Counseling, 1968-69, funded by the United States Office of Education (O.E.) No.: OEG-0-8-080088, Bureau of Research, and Southern Illinois University

"Educational Evaluation Institute; 4-1-69 to 8-31-69, funded by the United States Office of Education No.: OEG-0-9-230491-4392(010).

Memberships: American Educational Research Association

American Psychological Association
Division 5 — Educational Measurement
Division 15 — Educational Psychology

Phi Delta Kappa

National Council on Measurement

Phi Kappa Phi

**Papers and
Publications:**

A. Books

Research Design in the Behavioral Sciences: Multiple Regression Approach, Southern Illinois University Press, Feffer and Simons, Inc., London, 1969.

Readings in Educational Testing, Selected Academic Readings, Simon and Schuster, Inc., New York, 1969.

Evaluation for Decision-Making in the Schools. Houghton Mifflin Company, Boston, 1971.

Measurement and Evaluation in the Schools (contract with Houghton Mifflin Company for Publication January 1974)

B. Journal Articles and Reports

"A Comparison of Grade Equivalent Scores Between Grade Levels on Two Subjects of the Iowa Test of Basic Skills," Journal of Educational Measurement, Vol. 2, No. 2, December, 1965.

"An Investigation of Multiple Choice Items with Negatively Stated Items, IGPA Newsletter, Spring 1967, No. 23, pp. 35-37.

"Uniformity of Growth in the Basic Skills Throughout the School Year and During the Summer," Journal of Educational Measurement, Vol. 5, No. 2, summer, 1968. pp. 91-98. Also reprinted in Perspectives in Educational and Psychological Measurement, Prentice-Hall, Englewood, N.J., 1972.

"Uniformity of Growth in the Basic Skills Throughout the School Year and During the Summer." (Doctoral Dissertation) Dissertation Abstracts, 1967, Vol. 27, pp. 2866-A-2867-A.

"Teacher Recruitment: Proposed Research and Implementation," Proceedings for the Fourth Annual Research Seminar, Phi Delta Kappa (Upsilon Campus Chapter, Northwestern University, March 1968).

"The Development and Validation of the Self-Report Test of Impulse Control," Journal of Clinical Psychology, October 1969, No. 4, Vol. XXV, pp. 434-438.

"Clinical Validation of an Impulse Control Scale," Newsletter for Research in Psychology, May 1969, No. 2, Vol. XI, pp. 6-7.

"The Educationally Disadvantaged Elementary School Child: Anxiety Reduction and Behavioral Change through Public Commitment and Counseling," Final Report for U.S.O.E. Grant OEG-0-8-080088, June 1969.

Journal Articles and Reports (Cont.)

"Within-Groups Changes in Reading Performance, a Further Analysis," *Perceptual and Motor Skills*, Summer, 1968, No. 27, pp. 292-294.

"The Summer Vacation -- An Interruption in Learning," *Illinois Journal of Education*, January, 1969, pp. 46-49.

"Impulse Denial in Psychiatric Inmates," *The Journal of Correctional Education*, Winter, 1969, Vol. XXI, No. 1, pp. 12-16.

"Impulse Control of Minimum and Maximum Security Inmates," *The Journal of Correctional Education*, Summer, 1969, Vol. XXI, No. 3, pp. 8-12.

"Interpreting Ability Test Results to Elementary School Teachers," *Final Report for the Office of the Superintendent of Public Instruction, Illinois*, May 1970.

"A Bibliography of Materials on the Year-Round School," *Office of the Superintendent of Public Instruction, Illinois*, August 1970.

"Directional Hypotheses with the Multiple Linear Regression Approach," *Multiple Linear Regression Viewpoints*, January 1971, Vol. 1, No. 3, pp. 89-102.

"The Use of Public Commitment and Counseling with Elementary School Children: An Evaluation," *Elementary School Guidance and Counseling*, Vol. 5, No. 1, October 1970, pp. 22-35.

"A Factor Analytic Study of the Multidimensional Properties of Impulse Control," *Journal of Clinical Psychology*, Vol. XXVII, No. 4, October 1971, pp. 495-498.

"The Use of the OAIS in Admission Selection and Counseling," *College and University*, Winter 1971, Vol. 46, No. 2, pp. 115-122.

"How Research Aids the School Board," *Illinois School Board Journal*, November-December, 1971, No. 6, Vol. 39, p. 15.

"The Effects of Various Techniques of Interpreting Test Results on Teacher Perception and Pupil Achievement," *Measurement and Evaluation in Guidance*, April, 1972, Vol. 5, No. 1, pp. 290-298.

C. Papers Presented

"A Comparison of Grade Equivalent Scores Between Grade Levels on Two Subtests of the Iowa Tests of Basic Skills," paper presented to a meeting of the American Educational Research Association, February 1965.

"Uniformity of Growth in the Basic Skills Throughout the School Year and During the Summer," paper presented to a meeting of the American Research Association, February 1967.

"A Study of Negatively Stated and Positively Stated Multiple Choice Items," paper presented to a meeting of the American Educational Research Association, February 1967.

"An Investigation of the Effects of the University Climate on the Impulse Life of the Student," paper presented to a meeting of the American Educational Research Association in Los Angeles, California, February 1969.

Papers Presented (Cont.)

"The Mathematical Equivalence of the Tests of Significance of the Point Biserial Correlation Coefficient and the t-test for the Difference Means," paper presented to a joint meeting of the American Educational Research Association and the National Council on Measurement in Education in Los Angeles, California, February 1969.

"Interpreting Ability Test Results to Elementary School Teachers," paper presented to a meeting of the American Personnel and Guidance Association in Las Vegas, Nevada, April 1969.

"The OAIS: A Validity Check," paper presented to a meeting of the American Educational Research Association in Minneapolis, Minnesota, March 1970.

"Interpreting Ability Test Results to Elementary School Teachers," paper presented to a meeting of the American Educational Research Association in Minneapolis, Minnesota, March 1970.

"A Validity Study of Self-Report and Physiological Measures of Test Anxiety," paper presented to a meeting of the American Personnel and Guidance Association in New Orleans, Louisiana, March 1970.

"Interpreting Ability Test Results to Elementary School Teachers," paper presented to a meeting of the American Personnel and Guidance Association in New Orleans, Louisiana, March 1970.

"Student Opinions and Black Studies," paper presented to a meeting of the American Educational Research Association in New York, February 1971.

"Practice Effects of Repeated IQ Testing," paper presented to a joint meeting of the American Educational Research Association and the National Council on Measurement in Education in New York, February 1971.

"Directional Hypotheses with the Multiple Linear Regression Approach," paper presented to a meeting of the American Educational Research Association in New York, February 1971.

"Test Interpretation Without Numbers," paper presented to a meeting of the American Personnel and Guidance Association in Atlantic City, April 1971, and Chicago, March 1972.

"Relationships Between Test Anxiety and Selected Test Variables," paper presented to a meeting of the American Personnel and Guidance Association in Atlantic City, April 1971.

"Effects of Repeated Testing on Verbal and Nonverbal Ability Measures," paper presented to a meeting of the American Personnel and Guidance Association in Atlantic City, April 1971.

"Stability of Teacher Ratings of Pupil Behaviors in a Classroom Setting," paper presented to a meeting of the American Personnel and Guidance Association in Chicago, March 1972.

"Salience of Concepts and Commitment to Extreme Judgments in the Response Patterns of Teachers," paper presented to a meeting of the National Council on Measurement in Education in Chicago, April 1972.

EVALUATION REPORT OF PROJECT DIAL

OFFICE OF THE SUPERINTENDENT OF PUBLIC INSTRUCTION

Prepared by Donald Beggs,

September 12, 1972

Procedure

My first contact with Project DIAL was a letter from the Director describing the project and asking for individuals to respond if they were interested in the project. Upon agreeing to evaluate the project I reviewed the proposal and the five questions which were to be answered by the outside evaluators. The four objectives were available along with a plan for implementation. In this way, I was able to establish some expectations for the project that were not dependent on the practical problems of implementation. This was most helpful to me in the evaluation.

The on-site evaluation took place September 7 and 8, 1972. The on-site evaluations included the following:

- (a) a continuous series of meetings with the director and assistant director,
- (b) receiving a rough draft copy of the Annual Report describing the activities of last year,
- (c) briefly viewing a slide presentation showing activities that are evident during the administration of DIAL,
- (d) observing the materials that are a part of the DIAL package (this also included the score sheets),
- (e) discussing current planned analyses with the consulting statistician, and
- (f) discussing with the other two independent evaluators the alternatives available during the last year and the potential alternatives for the coming year.

It is my opinion that the material that I was able to review prior to my visit was most helpful. During the on-site visit the staff was always available to answer questions and provide additional information. The consulting statistician was impressive in his questions generated and his answers to our specific questions about the analyses. I believe that the project was well presented and that I have ample evidence of the following observations and am able to answer the five specific questions generated by the project staff.

Observations

I have decided to include in this report a summary of my observations prior to answering the five specific questions

and making recommendations in order for the reader to better understand my recommendations. The following observations seem important:

1. During the first year of the project, the activities have centered on objective 1: "To compile an acceptable set of evaluative instruments which may be used for the identification of potential learning disabilities in children 0-6 years of age."
2. During the year the staff was forced to restrict objective 1 to 3-6 years of age.
3. A budget change was made that reduced the first year funding by approximately three-fourths. This budget change forced several changes and greatly increased the staff work load.
4. Objective 1 is being effectively dealt with in the planned statistical analysis. This objective will continue to be a major responsibility of the staff for years to come.
5. Objective 2: "To develop recommendations for implementation and utilization of this final battery" is still in the alternative stages because it is quite dependent on objective 1. If the DIAL procedure is finally developed for prediction purposes only, objective 2 will require one type of activity and this is primarily description and caution about the use of the instrument. If the DIAL procedure is directly related to a later diagnostic procedure, objective 2 will require a lengthy description of the relationship between the DIAL and the diagnostic procedure.
6. The major problem for getting closure on objectives 1 and 2 is that the criteria for the potential use of this instrument is quite vague. We spent a considerable amount of time on this topic and listed between ten and fifteen potential criteria that might be of concern. This topic must be dealt with immediately in order for the project to have an impact. The primary

question centers on determining how school personnel make the decision to remove a child from a regular classroom.

7. A plan must be developed in order to test the strength of the criteria to be employed in this project.
8. Over 4400 children have taken the initial battery. This is more than adequate in order to provide for an effective analysis of DIAL.
9. At the present time the plans for evaluating DIAL are primarily concerned with determining the developmental characteristics of the individual tasks.
10. Evidence has been collected that will allow the staff to determine if there is cultural-bias evident in the DIAL procedure.
11. The procedures for scoring have not been finalized, but the staff is working on this. Several procedures are still under consideration.
12. The current staff is working to the maximum of their energy level and they will definitely need assistance as the assessment procedure develops further.
13. The Advisory Committee has not been an asset to the project.
14. Several items on DIAL seem to be redundant or assessing the same behavior. A statistical analysis should be employed in order to determine the factor structure of DIAL.
15. The staff is concerned about the relationship between the first two objectives and the last two objectives. I share their concern and strongly advise that there should be a strong relationship among the objectives. This advice is dependent on my opinion that DIAL should do more than predict, in that it should also provide direction for future diagnostic analyses.
16. In the future the staff should place more rigorous demands on those units who wish to use experimental DIAL. In order to use DIAL, a unit should be required to agree to allow more pilot work to be tried out in the unit using the DIAL procedure. This procedure is not all uncommon for units working with experimental materials.

17. The staff is concerned with the need for determining the effects on the results of repeated use of DIAL with the same children. This should be reviewed in terms of the effect of repeated testing on the predictability of the criteria.
18. The reliability of the instrument was discussed at length. After hearing the discussion, I am convinced that the primary concern should be item validity and the effects of prior experiences. I don't believe the traditional test-retest reliability procedures will enhance DIAL.
19. There must be an analysis of the order in which the tasks are presented to the child. This is not an immediate concern, but it will be most important to investigate after the final tasks have been chosen.

Answers and Recommendations

Question 1: How well have we met our objectives?

The project staff has been very effective in dealing with objective 1. Objective 2 is highly dependent on objective 1, but the project is effectively dealing with the tasks required in objective 2. Objectives 3 and 4 have not been dealt with during the first year. It is my opinion that they should have not been dealt with the first year with only two staff people.

Recommendations

- (a) All four objectives should be retained for this project.
- (b) A decision must be made by the staff concerning the interrelationship among the four objectives. Obviously objectives 1 and 2 are related and objectives 3 and 4 are related. The primary concern is are 1, 2, 3 and 4 related. If all the objectives are related then the primary work for the coming year should again center on objectives 1 and 2 and possibly begin dealing with objectives 3 and 4 after more pilot information has been gathered. The work on objectives 3 and 4 could begin during the Spring of 1973. If objectives 3 and 4 are considered disjoint from objectives 1 and 2, the staff should immediately begin to deal with these objectives separate from the first two objectives. I recommend the first alternative.

Question 2: Which methods and procedures for reaching goals should be continued? discontinued? altered?

Recommendations

- (a) The current staff members should be retained and reinforced for an outstanding job done during the first year.
- (b) The statistical consultant should be retained and contracted for more services as explained in (c).
- (c) The following statistical work should be considered for implementation:
 - 1. Continue the developmental analysis of the items.
 - 2. Eliminate any items that exhibit no variability among children.
 - 3. Prepare a set of norms that is based on a stratified sample of children. The stratification should be made on (a) urban-rural, (b) ethnic groups, and (c) sex. The SES measure available to the project is not appropriate for stratification purposes.
 - 4. Determine the factor structure of DIAL.
 - 5. Establish norms for at least every six months. If possible the data should be analyzed to see if the norms change in less than six months.
 - 6. Determine from the previous analyses which tasks can be dropped from DIAL without affecting the R^2 for the different criteria.
- (d) A revised edition (based on above analyses) of DIAL should be piloted in the Spring 1973.
- (e) The Advisory Committee should be dropped. The Steering Committee within OSPI can very effectively carry-out the responsibilities of the Advisory Committee.
- (f) Early childhood consultants should be brought in to begin the work on objectives 3 and 4. As a result of my experience on this project, I would strongly recommend that at most three

consultants come to the project at the same time. The discussion with fellow consultants is quite valuable to the project.

- (g) Pilot studies should continue but the units using DIAL should be required to allow additional testing by the Project DIAL staff.
- (h) The project should contract with some external agency to determine what variables school personnel employ in placing children in special classrooms. This should be done immediately and the report submitted to project DIAL by Spring 1973.
- (i) The project should begin to consider ages 0-3.
- (j) The criteria for success must be clearly delineated. These criteria should be established immediately after recommendation (h) is completed.

Question 3: How can we improve our internal organization?

Recommendations

- (a) Eliminate the Advisory Committee and shift the role of the Advisory Committee to the Steering Committee.
- (b) Employ a systems person to help channel the flow of information in and out of the project.
- (c) Employ a project coordinator who is responsible for the data collection and management activities that are related to objectives 1 and 2.
- (d) The director and assistant director should begin to move on objective 3 while the project coordinator takes care of the daily problems with DIAL.

Question 4: How can we improve DIAL?

Recommendations

- (a) Complete the statistical analyses discussed with respect to question 2.
- (b) Reduce the screening instrument to a minimum.
- (c) Treat DIAL as a screening instrument and

develop a more involved diagnostic procedure while working on objective 3.

- (d) Specifically describe the criteria for prediction.
- (e) Finalize the scoring procedure for DIAL.
- (f) Develop a composite score for the DIAL that is a product of differential weights for each item. The weights can be determined from (a) above.

Question 5: What objectives should be most important for next year and how can they be reached?

I am responding to this question based on my recommendations given for the first four questions. I am also assuming that I have at least \$200,000 to work with in my plan. I will try to list my activities in terms of importance and sequence.

1. Immediately contract with an outside agency to determine how school personnel make decisions about placing children in a special classroom. Part of the contract would require a final report three months after the contract begins.
2. After the variables have been established as a result of the contracted study, I would establish the criteria for the DIAL procedure
3. I would contract with the statistician to obtain his services to complete the analyses discussed previously.
4. There should be a minimum of at least two additional people employed for the project: (1) a systems analyst and (2) project coordinator. I have discussed their role elsewhere in this report.
5. Contract to have at least 100 kits for DIAL prepared to be used throughout the state.

These five things should be done as quickly as possible. After these five things are initiated, the director and assistant director should turn their attention to objectives 3 and 4. The Steering Committee from OSPI members should review and make recommendations on ideas generated by the director and her staff. The director would be wise to try to employ practicing learning disability specialists to deal with objectives 3 and 4.

Finally the project staff should consider preparing grants to be submitted to NIMH and USOE (NIE) dealing with the development and experimentation of diagnostic procedures.

I believe that Dr. S. Alan Cohen could be most helpful in this endeavor.

Concluding Statement

This project is well worth every cent spent on it. The OSPI has received a maximum payoff for the first year of activities. The staff has shown its willingness to work on difficult problems and deserve continued funding at an increased level in the future. It is my anticipation that when the state assessment program is initiated, the products of Project DIAL will be an integral part of the assessment package.

S. Alan Cohen

As Associate Professor and Director of the Reading and Language Arts Center at Yeshiva University's Graduate School in New York City, Dr. Cohen has developed and directed that school's unique doctoral program in reading. His curriculum research has generated the concept of High Intensity Learning, a behavior modification application of learning theory to the regular classroom. That same theory underlies his materials designed to teach all children to read published as Random House Reading Programs. His work as consultant to Random House and to New Century Publishers and the B.F. Skinner Reading Program reflects an unusual synthesis of radical operant conditioning the humanistic "soft hearted" approach to teaching reading using classic children's literature.

For three years he was Associate Director of Yeshiva University's NDEA Institute for Teachers of Disadvantaged Youth. He was one of the architects of the Job Corps Reading Program and has been consultant to the Right to Read Office, the U.S. Office of Education, U.S. Office of Economic Opportunity, Philadelphia School System and a dozen other special programs and research projects on the disadvantaged.

A specialist in perception, Dr. Cohen has published about 50 research reports, reviews, journal articles and book chapters in perception and reading. His most recent major publication that has been described as a unique contribution to the field is *Teach Them All To Read: Theory, Methods and Materials for the Disadvantaged*. In 1969-1970, he published a series of research reports and articles on the relationship between visual perception and school achievement that has caused widespread rethinking of many principles currently underlying the field of special education.

With Harry Passow and Abe Tannenbaum, S. Alan Cohen formed the education task force in the first war on poverty, Mobilization For Youth. Since that time Dr. Cohen has concentrated on research, materials and systems development, writing and teaching in two major areas: teaching reading to disadvantaged and learning disabilities.

In addition to his major commitment to graduate education, Dr. Cohen helped to found Urban Ed. Inc., New York's first multiracial private education consultant corporation. He is Vice President of that company. In addition, he is Chief Educational Consultant to the Educational Systems Division of Random House/Singer Publishers.

Essentially, Dr. Cohen is an eclectic learning psychologist strongly influenced by two antithetical psychological positions--existentialism and radical behaviorism. He has managed to extend this theoretical orientation into the practicalities of every day school keeping and still retain his reputation as a university researcher.

VITA

DR. S. ALAN COHEN

Offices: Reading and Language Arts Center
Ferkau Graduate School of Humanities and Social Sciences
55 Fifth Avenue
New York, N. Y. 10003 Telephone: 212-255-5600
Ext. 410

Random House Educational Systems Division
201 East 50th Street
New York, N. Y. 10022 Telephone: 212-PL1-2600
Ext. 2562

CURRENT POSITIONS: Associate Professor, Department of Curriculum and Instruction
Director, Reading and Language Arts Center
Consulting Education Director, Random House Educational
Systems Division
Vice President, Urban Ed Inc.
Consultant, Right To Read, U.S. Office of Education

FAMILY: Wife: Rita Cohen Children: Shelley Ilene, age 16
Stuart Benjamin, age 13
Jerri, age 12

PAST POSITIONS:

1965-1968 Associate Director, NDEA Institute For Teachers of Disadvantaged Youth, Yeshiva University
1965-1967 Consultant, U.S. Office of Education
1966-1967 Consultant, Model School, East Orange, New Jersey
1966-1968 Consultant, Programmed Instruction Division, Appleton-Century-Crofts
1967-1968 Consultant, Vitrol Corporation Systems Analysis
1966-1967 Associate Director, Perceptual and Cognitive Development in Disadvantaged Preschoolers--Research Project,
Center for Urban Education
1966-1967 Associate Director, Self Instructional Research Project, U.S. Office of Education Grant 1-6-062528-2092
1966 Consultant, Women's Job Corps Center, Huntington, West Virginia--Xerox Corporation
1965-1966 Consultant, Job Corps, Office of Economic Opportunity, Washington, D.C.
1963-1965 Director of Reading, Mobilization For Youth, New York City
1964-1965 Director of Materials Development Unit, Mobilization For Youth, New York City

- 1964-1965 Director, Ford Foundation Project, Passaic Public Schools, Passaic, N.J.
- 1964-1965 Consultant, Youth Work Project, Bedford Stuyvesant YMCA and Dept. of Labor
- 1963-1964 Consultant, Programmed Instruction, Bolt, Beranek & Newman, Cambridge, Mass.
- 1962-1963 Lecturer and Doctorate Teaching Fellow, Boston University
- 1962-1963 Lecturer, Bentley College
- 1962-1963 Consulting Psychologist, Crotched Mountain Foundation for Handicapped
- 1961-1962 Assistant Professor of Education, Director, Reading Lab, Jersey City State
- 1956-1961 Classroom teacher

FORMAL EDUCATION:

- B.S. 1953, English and journalism, Suffolk University, Boston, Mass.
- Ed.M. 1956, philosophy and history, Harvard University
 - 1956-1958 The New School For Social Research--philosophy and psychology
 - 1958-1961 Rutgers University--psychology
- Ed.D. 1965, reading, educational psychology, psychological and educational testing, Boston University

AREAS OF SPECIALIZATION:

1. Reading: research, curriculum and materials development.
2. Research in visual perception development.
3. Diagnosis of reading disorders and their treatment.
4. Educational and psychological tests and measurements.
5. Research in learning problems of socially disadvantaged.
6. Teacher training.

PUBLICATIONS:

Textbook:

Teach Them All To Read: Theories, Methods and Materials for the Disadvantaged (New York: Random House, 1969), Ch 11.

Books Chapters:

"How To Teach Reading and Study Skills in the High School," An English Teacher's Reader, M. J. Weiss, editor (New York: Odyssey Press, 1962), pp. 160-170.

"Factors of Format Relative to Comprehension," Reading and Inquiry (International Reading Association, 1965).

Book Chapter: (Cont.):

"Reading: Large Issues, Specific Problems, Possible Solutions," *Schools in A Changing Society*, A.J. Reiss, editor (Free Press of Glencoe, 1966).

"Reading Instruction--Beating the 50-Year Lag," *Pressures That Disorganize in Secondary Schools*, 31st Yearbook, New Jersey Secondary School Teachers Association, 1966.

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"Increasing Reading Achievement Among the Disadvantaged," *Reaching the Disadvantaged Learner*, A.H. Passow, editor (New York: Bureau of Publications, Columbia University, 1970) pp. 131-152.

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"Dyspedagogia As A Cause of Reading Retardation: Definition and Treatment," *Learning Disorders*, Vol. 4 Reading, Barbara Bateman, editor (Seattle: Special Childhood Publication, 1971) pp. 269-291.

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"A Matter of Self Perception," *NJEA Review*, February, 1961, p. 321.

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"Paperbacks in the Schools," *The Nation's Schools*, August, 1965.

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- "Reading and Language Arts Skills," Imperatives For Change, Ferkauf Graduate School and New York State Department of Education, 1967, p. 83.
- "Diagnosis and Etiology or Operation Overthink," Proceedings 1967 International Convocation on Children with Learning Disabilities. D.L. Newcomb, editor. Home For Crippled Children, Pittsburgh, Pa., 1967, pp. 35-142.
- "Socially Disadvantaged Americans: Slow Learners," The Slow Learning Child, Australian Journal on the Education of Backward Children, University of Queensland, Australia, Vol. 14, No. 3 (March, 1968), pp. 153-160.
- "Federal Money and Retarded Readers: Who's Kidding Whom?" Ohio Reading Teacher, Vol. 2, No. 3 (February, 1968), pp. 6-9.
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- "Do-It-Yourself Diagnostic Reading Tests," Scholastic Teacher, Vol. 17, No. 4 (October 4, 1968), p. 18.
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- "Cause Vs. Treatment in Reading Achievement," Journal of Learning Disabilities (March, 1970).
- "Dyspedagogia in Urban Schools" National Council of Teachers of English Annual Convention, Washington, D.C., November 29, 1969 (with Anne M. Mueser).
- *"The Taxonomy of Instructional Treatments in Reading: Its Uses And Its Implications As A Classroom Analysis Scheme," The Journal of the Reading Specialist, Vol. 11, No. 1, (October, 1971), pp. 5-23.
- "S. Alan Cohen," News Book In Reading Instruction: Series I (New York: Multi Media Education, Inc., 1971), pp. 51-56.
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- "Reading, Racism and Poverty," Conferences Proceedings (Day Care Council of New York City, 1972).
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- "Seven Fallacies About the Relationship of Language to Reading Retardation in Urban Disadvantaged Beginning Readers," Reading Teacher (at press).

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"Review: Specific Language Disability Test by Neva Malcomesino (Cambridge, Mass. Educators Publishing Service, 1967) in Mental Measurement Yearbook, seventh edition.

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*PREP: Curriculum Experiment in Teaching Socially Disadvantaged Junior High School Children (Report to Ford Foundation and Fairleigh Dickinson University, June, 1965).

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*Learning Disability Patterns in Disadvantaged Children (Reading and Language Arts Center, Graduate School, Yeshiva University, 1966).

*Teacher Perceptions and Manifest Hostility (Reading and Language Arts Center, Graduate School, Yeshiva University, 1966).

*A Study of Conceptual Vocabulary in Primary Level Disadvantaged Children (Reading and Language Arts Center, Graduate School, Yeshiva University, 1970) with Gita Kornfeld.

*A Taxonomy of Materials and Strategies for Teaching Reading and a Classroom Observation Scheme (Reading and Language Arts Center, Yeshiva University, 1970).

*Design & Development of Enabling and Course Objectives in Reading Using a Systems Coding Analysis (SCAN) Computerized Language (Bureau of Cultural & Educational Research, New York SED, Albany, New York, 1971).

School Materials and Programs:

Dr. Cohen is consulting editor of the Random House Reading Programs, grades K-9. He is also author of the following components of that program:

Random House Reading Program Orange (Grade 2)
Random House Reading Program Yellow (Grade 3)
Skilpacer Yellow (Grade 3)
Skilpacer Red (Grade 4)
Skilpacer Green (Grade 5)
Skilpacer Blue (Grade 6)
Skilpacer Tan (Grade 7)
Skilpacer Olive (Grade 8)
High Intensity Learning Systems: Classroom Management System

Dr. Cohen was one of the creators of the Random House experimental urban children's newspapers: The Chief, The Star, The Tower, The Beacon and The Independent.

Co-Author:

Application Forms A (New York: Hobbs Dorman Publishers, 1966)

Application Forms B (New York: Hobbs Dorman Publishers, 1966)

Spellbinder: Spelling with Write and See and AFS 2000 (with A. Mueser) (New York: New Century Education Division of Meredith Corp., 1970)

Doctoral Dissertations Under Dr. Cohen's Direction:

Department Recently Completed

- Psych Dialect Pronunciation, Auditory Discrimination and Reading (Ruben Gross, 1967)
- C & I Effect of Structure and Topic on Dialect Usage in Written English (Gertrude Berger, 1968).
- C & I Dialect, Auditory Discrimination and Phonic Skills (Susan Sardy, 1969).
- Psych Spatial Orientation in Relation to Reading Acquisition (Miriam Netzer, 1969).
- Psych Role of Meaning in Verbal Learning (Jerome Schwartz) 1970.
- C & I Linguistic Factors in Reading Reversals (Steven Reinstein, 1972)
- ED Psych Relationship of Four Cognitive Operations To Decoding-For-Reading Task (Angel Terry, 1971)
- C&I Effects of The Vertical Element in b,d,p,q On Reading Reversals of Kindergarten Child (Joan Hyman, 1971)
- C&I Effects of Different Reinforcers and Operant Level On Reading Task Behavior of Black Kindergarteners (Anna Mueser, 1971)
- C&I Effects of Ethnicity & Sex of Task Administrator on Learning Performance of Black Junior High Schoolers (Vivian Gaman, 1971)

EVALUATION REPORT ON DIAL
SUBMITTED TO THE
OFFICE OF SUPERINTENDENT OF PUBLIC INSTRUCTION
STATE OF ILLINOIS

by

Dr. S. Alan Cohen
Director
Random House Educational Systems Division
201 East 50th Street
New York, New York

September 7, 8, 1972

BRIEF DESCRIPTION OF PROJECT DIAL

OBJECTIVES

In response to the Illinois State Legislature's passage of Bills HB 322 and 323 which establish "learning disability" (LD) as an official category eligible for special services, and which allow such children as young as 36 months of age to enroll in school, the Office of the Superintendent of Public Instruction (OSPI) for the State has implemented Project DIAL (Developmental Indicators for Assessment of Learning). With a staff of two and a \$250,000 first-year budget that was cut to \$65,000, the project was designed to fulfill four objectives:

- Objective 1: To compile an acceptable set of evaluative instruments to identify potential LD's in children 0 to 6 years of age.
- Objective 2: To develop recommendations for implementing and using this battery.
- Objective 3: To develop recommendations to intervene, ameliorate, prevent and/or remediate these children.
- Objective 4: To recommend areas in early childhood LD that need further research.

PROGRESS REPORT

In one year (by September 1, 1972), a test battery has been designed and piloted with data on 4400 children ages 3-6. Much of Objectives 1 and 2 are accomplished. A significant amount of Objective 4 has been achieved.

GENERAL IMPRESSIONS

With a budget of only \$65,000 (less salaries), and an expenditure of slightly over \$50,000, and with only two full-time staff, the project has achieved an extraordinary level of accomplishment. The literature on assessment of LD and early childhood was thoroughly reviewed, an impressive pilot instrument and procedures developed and fielded, and a large amount of data was collected. The project staff has manifested unusual professional competency in developing the "product" and in carrying out the "process." I know of no other educational project in which the efficiency and productivity equals that of DIAL. I find it, frankly, almost unbelievable that Dr. Mardell and Mrs. Goldenberg have been able to accomplish so much at such a high level of quality, in such a short period of time. Project management has been extraordinary. While the project has been grossly understaffed given the expressed objectives, it appears that

the two-man team has been markedly more efficient than the common practice of overstaffing projects. That efficiency appears to be the result of an interaction of the minimal staff and the brilliant talents of Dr. Mardell and Mrs. Goldenberg. I am uncomfortable about the possibility of establishing an expectation on the part of the OPSI establishment that the future course of DIAL (and other projects) can reach this level of quality and productivity with such meager fiscal support and staffing. In short, the cost effectiveness of DIAL in 1971-1972 may have "spoiled" those sources who determine funding levels, and I would caution such sources against expecting such cost effectiveness in the future. As of September, 1972, DIAL is just short of a miracle, and it would be unwise to push the miracle workers too far.

The following criticisms, discussions and recommendations are presented as constructive comments that might improve further what is already an excellent project.

BASIC PROBLEMS IN THE DIAL PROJECT

Two basic problems underly the entire project, and their solutions require decisions, for they cannot be resolved by combining different points of view:

- Problem 1: What is the operational definition of the criterion variable--"being labeled LD"?
- Problem 2: Should DIAL be a predictive screening device or a diagnostic instrument that could lead to intervention and prevention.

Problem 1:

In designing either a screening device to predict LD three or four years before grade school or a diagnostic device that prescribes intervention activities to prevent or remediate LD, the criterion variable, LD, must be defined. Most medical specialists, lay people and a large proportion of professional educators glibly assume they know what they are referring to when they use the term.

Most people assume, for example, that placement in LD classes or the provision of special services for a child labeled LD is based on the detection of a specific set of conditions or symptoms. While it is true that certain "experts" have defined such sets, they are not universally accepted. Furthermore, those symptoms are highly questionable within any expert's given set. It is easy enough for legislators to talk about perceptual dysfunction, dysfunctions in reading, spelling, calculating, etc., or minimal

brain dysfunction, dyslexia and so on, but the statement of hypothetical constructs is not the same thing as defining the term. Quite frankly, the LD term seems to be a "disease" in search of its symptoms, but LD specialists often refuse to admit this.

The problem is further complicated by the realities of day to day school practices where some children with certain behavioral patterns are labeled LD and others with identical patterns are not. For example in a 1966 study of behavioral patterns (test patterns) comparing middle class LD's with Title 1 urban underachievers, this evaluator found no difference. In every day realities the difference between an LD and a disadvantaged child is his ethnicity. Whites who do not achieve to expectancy are "LD," but blacks are "disadvantaged." (To be sure, we often hide this behind "low expectancy.") In other words, using this reality, a screening device at 3 years of age would simply eliminate low SES blacks by virtue of SES and color!

Another example of such realities occurs quite regularly in suburban communities where a small group of parents demand special services for their poor achieving offsprings, and they force their children into LD categories. A much larger group of parents acquiesce out of ignorance when the school dumps their "problem" children into special education categories to get them out of a classroom where they "can't do the work." A third parent group refuses to allow such dumping, and a child who is a problem is not labeled LD as a result. According to this reality, a screening device at age 3 to predict LD at age 7 would require items testing parent personalities and school personnel personalities!

The problem is: What will the criterion be for validating DIAL in a longitudinal study? If it is placement in an LD category, then it is possible to design a valid DIAL and never know it, because the validation correlation coefficients will be low if the above illustrated "spurious" criteria play as important roles as I claim in deciding whether or not a child is LD. If DIAL defines LD by virtue of its content independent of everyday realities, then OPSI has dictated an LD definition and is subject to the political pressures of various professional interests who constantly battle over this issue (to their own interests and at children's expense).

It was apparent to all three evaluators from the start of the evaluation, that the DIAL staff had designed an outstanding pilot instrument that implies an LD definition, but avoids the controversy that would result if they overly expressed that definition.

Unfortunately, further development of the instrument is impeded, because validation studies demand a validity criterion, and LD will have to be defined. In other words,

the moment of truth is upon them; OPSI must make its stand.

Recommendations for doing so are included below.

Problem 2:

A procedure or test normed for prediction to screen for LD would be different from a test or procedure developed for diagnosis. The latter would be used for the former, but the reverse is impossible. It is important to understand, however, that diagnosis in education has a unique meaning--it is a process of analysis that yields prescriptive activities for specific behaviors. The description of a specific condition or its categorization may be a useful definition of diagnosis in medicine, but it is useless in education. In education, diagnosis must describe exactly what should be manipulated to get desired student behaviors.

If the DIAL Project produces a screening device for early detection normed to predict placement in "LD" or "not LD" categories at a future date, then it will surely generate the following unhappy results:

1. The predictive correlation coefficient will be by a miracle .60, more probably something of the magnitude of .40. Such magnitudes have great value for basic research, but for early detection of individuals, they are functionally useless. The argument that this magnitude is better than "guessing" is misleading, for in the context of such an argument "guessing" means flipping a coin. But in the real world--even in the worst school system--guessing is not coin flipping, but a clinical judgment. Previous research tells us that even weak clinical judgments can do considerably better than .40. In other words, for individual students, the end product--a screening procedure for predicting LD placement later on--would be useless. To compound this problem, certain other factors add another problem far more insidious and damaging to children than even the refusal to attempt early intervention for LD:
2. The use of such a predicting screening device is bound to lead to the categorization of children, especially those who do in fact manifest LD symptoms (whatever they may be), and hence to the tragic and debilitating process involved in the "self fulfilling prophecy" phenomenon. No matter what precautions are taken, such a screening device must cause more harm than currently caused by the absence of such predictors. Over 50 years of experience with psychometric devices for prediction have demonstrated that they cause more harm than they are worth. No amount of professional training or semantic manipulation ("high risk," "propensity for") seems to neutralize this deleterious practice.

In other words, the attempt to alleviate a harmful condition, LD, will probably produce a monster far worse than the original monster.

On the other hand, using the educational definition of "diagnosis" (a process of specifying specific behaviors that must be modified), one would generate a procedure that tells the school staff exactly what each child needs to learn to avoid later placement in an LD category. However, the development of such a diagnostic procedure would not be validated by predictive correlation with the criterion (placement/no placement). Instead, it would lead to pedagogical practices at ages 3-5 that would, in turn, be correlated with the criterion. The problem here, of course, is the amount of validation work required and the necessity of a longitudinal study involving at least three groups, one of which would be a high risk group that receives no intervention. (See recommendations below). This task is a problem by virtue of the enormity of the demand and because it will in effect result in OPSI again defining LD in the face of some experts who would disagree.

RECOMMENDATIONS FOR SOLVING THE 2 BASIC PROBLEMS

Both problems have the definition of the criterion variable, LD, in common. Relative to this factor, I recommend:

1. OPSI cannot deal intelligently with LD unless it defines it operationally. OPSI cannot avoid the criticism it will get when that definition is determined. I recommend that OPSI define the condition, or else drop the entire DIAL Project. If it chooses the latter, then it might well consider eliminating its department of Special Education. Since OPSI would, I assume, eliminate neither DIAL nor Special Education, I recommend the following procedure for defining the term:

- a. A separate study begin immediately under the DIAL Project, staffed by a separate set of personnel or subcontracted to another agency* to conduct a discrepancy analysis study of what experts consider the operations of LD to be compared to the operations involved in placing children in grades 3 and 5 in LD categories in Illinois schools.
- b. The experts' definitions be developed in relation to the following commonly used factors:
 - (1) Two-year lag in achievement in reading and math using 10 as expectancy.

*Please consider this evaluator if you decide to take this recommendation.

- (2) ITPA
- (3) Frostig
- (4) Bender Gestalt
- (5) DAP
- (6) Hyperkinesis and other "bothersome" behaviors
- (7) Marked deviance from peers
- (8) Social maturity (Vineland, etc.)
- (9) Personal interview
- (0) Articulation and language development
- (1) Perceptual motor survey (Kephart, etc.)
- (2) Listening (attending, double focus, following directions)

- c. The real world analysis be conducted by sampling LD labeled children and tracing back by field workers details of how the diagnosis was determined. Frequency counts of decision variables plus weighted frequency counts (frequency times field worker's impression of each factor's weight relative to other factors considered in determining the diagnosis) would yield a pattern to be compared with the experts' definitions expressed in terms of b. above.
- d. Fund this study by (in order of priority)
 - (1) DIAL Funds 100%
 - (2) DIAL funds 20%, USOE 40%, NIH 40%
 - (3) USOE or NIH funding to OPSI
- e. Begin this study immediately parallel to but not instead of the continued development of DIAL, with a final report no later than 12 months after start up.
- f. Assign one full-time person to the project with one outside consultant and part-time field staff for a total expenditure not to exceed \$50,000.
- g. Do not call in outside LD experts to dictate definitions. That will only confuse the issue. Do not staff this study with a Special Education or LD specialist. Use behavior analysts and researchers to conduct the study to approach it without previous bias about LD.

2. Do not develop DIAL as a screening predictor. Develop DIAL as a set of criterion performance assessments (CPA) for each age level. CPA's would specify the exact operations a child would need to learn. That means the procedures would not be less than the present battery; they could be more, although different specific tasks might be dropped or added at different age levels. Do not worry about the length of the battery, for you would be, in effect, determining an ongoing, 10-month curriculum. Educators must stop thinking of testing as a one-shot, pre-post procedure and, instead, recognize it as an integral part of the ongoing teaching process.

DIAL should then be perpetuated as the major agency for gathering, inventing and disseminating pedagogical procedures for teaching children those criterion performances.

The validation for DIAL would then be a longitudinal study in which the independent variable is the intervention procedures derived from DIAL, with the dependent variable being the result of the study described in the previous recommendation (1. above).

That dependent variable may or may not be placement in LD categories as now practiced. If it is not, you will be correcting malpractices and insuring correct or valid placement.

Other Specific Recommendations

1. Internal Analyses

You now have data on 4400 children and should derive the following information:

- a. Which items are age specific (developmental)
- b. Which items have variance (discriminate)
- c. Which items tap the same behaviors (factor groupings)
- d. Which items correlate (item intercorrelation)
- e. Do a-d by:
 - (1) sex
 - (2) SES
 - (3) ethnicity

You may not publish norms by ethnicity. But it is absolutely mandatory to see if, in fact, blacks are disadvantaged. To deny ethnic differences is to deny we live in a culture diseased by racism and poverty

and that would be a gross injustice to low SES blacks and others.

2. Establish Norms.

Especially at the lower ages, do your age specific analysis by month and then let the results dictate your age markers in the published norms.

3. Eliminate same items.

Your internal analysis (1.b. above) will show items have no variance (all pass; all fail). Eliminate these items. Some items may be highly intercorrelated. At .80 and above you may want to eliminate them at this stage of test development.

4. Restructure the four areas of DIAL according to the results of the factor analysis (1.c. above). You may end up with only two areas. This is a separate issue from how you will divide up DIAL for administrative efficiency which is an engineering problem.

5. Begin contact for commercial publisher to produce and distribute the actual end product. Start this now because your legal department will obsess for months and the negotiations and bidding procedures will take time. The DIAL procedure will go nowhere unless professional publishers produce it and get it into schools. OPSI is not a publishing house and the State of Illinois would exhaust OPSI's resources in filling delivery and support demands. Such a publishing arrangement is legal in various forms:

- a. Cost plus (not recommended highly)
- b. Turned over to a publisher to be sold at cost plus to Illinois schools and regular price elsewhere.
- c. Royalty on out of state sales go to State of Illinois.

6. Design a plan for 1972-1973 and hire a systems person to work out and manage flow of data, materials, etc., for the entire project.

7. Do not hire a consultant board. Instead, allot about \$10,000 for consultants and personal travel. Tap specific consultants as needed.

8. Late in 1973 begin reliability studies for interobserver stability and for time of day effects. Since I have recommended the CAP approach, don't worry about test-retest item reliability. Under any condition, these kinds of DIAL tasks would be invalidated because of the learning effect of the pretest.

9. Define each step in further development and hire staff to manage each step.
10. Ignore for now the engineering problems such as design of materials, packaging, delivery, scoring ease etc. Leave that until a year or so when you are ready to produce the finished product. This is where professional publishers can help.
11. A year from now when the finished product is almost ready, you must test item order effects.
12. Forget about developing DIAL for 0-3 at this time. Reconsider this in 1973-74.

EVALUATION QUESTIONS AND ANSWERS:

You submitted the following specific questions to the evaluators.

1. How well has DIAL met its objectives?
Answer: Very well, considering the minimal staff and meager funding, extraordinarily well. Objectives 1 and 2 are largely met; 4 is well underway and 3 would be just beginning if you accept these recommendations.
2. Which methods and procedures should be continued or altered?
Answer: This is answered in the recommendations above. The most important recommendation of a change is presented in response to the two basic problems described above. Up to now, your procedures have been excellent. I would not have worked so hard to get such a large N. A thousand would have been more than adequate.
3. How can we improve internal organization?
Answer: Hire a systems person to develop operating procedures and manage them. Get a full-time girl or boy Friday who can also type. Use consultants on day-to-day basis. Hire "subproject" managers.
4. How can we improve DIAL?
Answer: Again, the recommendations above are offered with particular emphasis on the solutions to the two basic problems specified.
5. What objectives should be most important for next year?
Answer:
\$50,000 1. Do the criterion validation study as described.
\$10,000 2. Do the internal analyses.
\$20,000 3. Begin to compile the prescriptive

materials and activities to teach each criterion behavior capped by DIAL.

4. Do recommendations 1, 2, 3, 4, 5, 6, 7, 8.
5. Hire appropriate staff.

CONCLUSION:

The design of DIAL as a criterion performance assessment for intervention rather than as a simple screening procedure would be a massive contribution to educating Illinois preschoolers. Considering the billions of dollars about to be expended from 1973 to 1983 on preschool (Day Care) children, DIAL is the most promising, practical and timely project I have seen. The design of procedures that can be executed by volunteers and paraprofessionals makes it even more valuable. But the whole project must be geared to intervention, not screening. At this point in development the project has made astounding progress for which the project directors deserve unqualified praise.

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VITAE

Name: Carol Goldstein Mardell

Birthdate: November 30, 1935

Birthplace: Chicago, Illinois

Marital Status: Married; three children

Education: Bachelor of Science, 1956
University of Illinois
Urbana, Illinois

Master of Arts, 1958
University of Chicago
Chicago, Illinois

Doctor of Philosophy, 1972
Northwestern University
Evanston, Illinois

Professional
Experience:

Classroom Teacher (1956-1959)
School District 68
Skokie, Illinois

School Psychometrist (1959-1960)
School District 68
Skokie, Illinois

Itinerant Tutor (1965-1968)
School Districts 68 and 73½
Skokie, Illinois

Learning Disabilities Teacher (1969-1970)
School District 108
Highland Park, Illinois

Learning Disabilities Consultant (1970-1971)
Sager Solomon Schechter Day School
Highland Park, Illinois

Research Project Director (1971-)
Office of the Superintendent of
Public Instruction
State of Illinois
Chicago, Illinois

Name: Dorothea S. Goldenberg

Birthdate: November 26, 1934

Birthplace: Chicago, Illinois

Marital Status: Married; two children

Education: Bachelor of Science, 1956
University of Illinois
Urbana, Illinois

Master of Arts, 1968
De Paul University
Chicago, Illinois

Professional
Experience:

Classroom Teacher (1956-1958)
Palatine, Illinois and
Leyden Township High Schools

Itinerant Tutor (1965-67) L.D.
School District 68
Skokie, Illinois

Title 1 Classroom Teacher (1965 + 1966)

Learning Disabilities
Resource Room (1968-71)
Glenbrook North High School
Northbrook, Illinois

Asst. Professor (Part time 1971)
Graduate Course Extension
and Campus - L.D.
Chicago State College and
Pestalozzie - Froebel College
Chicago, Illinois

Research Project Asst. Director (1971)
Office of the Superintendent of
Public Instruction
State of Illinois
Chicago, Illinois